

AGENDA
Inland Wetland Agency
REGULAR MEETING
Monday, February 3, 2014
Council Chambers, Audrey Beck Building

Call to Order: 7:00 PM

Review of Minutes of Previous Meetings and Action Thereon:
12.02.2013 - Regular Meeting

Communications:
Conservation Commission:
GM Monthly Business memorandum

Public Hearings:
None

Old Business:
None

New Business:
W1526 - F. Costigliola - 111 Dunham Pond Rd. - Deck addition
W1527 - J. Schwoerer - 480 Woodland Road - Solar Panels

Reports of Officers and Committees:

Other Communications and Bills:
Conn. Federation of Lakes-The Voice for Connecticut Lakes
CT Wildlife November/December 2013
DEEP Letter Re: North Hillside Road Extension/Research and Technology Park

Adjournment:

DRAFT MINUTES
MANSFIELD INLAND WETLANDS AGENCY
Regular Meeting
Monday, December 2, 2013
Council Chambers, Audrey P. Beck Municipal Building

Members present: Chairman J. Goodwin, B. Chandy, R. Hall, K. Holt, G. Lewis P. Plante, B. Pociask,
K. Rawn, B. Ryan
Alternates present: P. Aho, S. Westa
Alternates absent: V. Ward
Staff present: Grant Meitzler, Wetlands Agent

Chairman Goodwin called the meeting to order at 7:02 p.m.

Minutes:

11-04-13 - Regular Meeting- Plante MOVED, Hall seconded, to approve the 11-04-13 minutes as written. MOTION PASSED UNANIMOUSLY.

11-13-13- Field Trip- Ryan MOVED, Holt seconded, to approve the 11-13-13 Field Trip minutes as written. MOTION PASSED with Goodwin, Holt and Ryan in favor and all others disqualified.

11-18-13- Special Joint Meeting-Holt MOVED, Plante seconded, to approve the 11-18-13 Special Joint Meeting minutes as written. MOTION PASSED UNANIMOUSLY.

Communications:

The Draft Conservation Commission Minutes and Wetlands Agent's Monthly Business report were noted.

Old Business:

W1524 – St. Jean – 43 Hickory La – Solar Panels

Holt MOVED, Hall seconded, to approve the application for wetlands file W1524, submitted by C-Tec Solar, on land of Michael St. Jean, for a solar panel array on property located at 43 Hickory Lane, as depicted on a plan dated October 22, 2013, revised November 29, 2013, and as described in other application materials.

This action is based on a finding of no significant impact, and is conditioned on the following provisions being met:

1. All erosion and sediment controls as described in the application shall be in place prior to construction, maintained during construction and removed when disturbed areas are completely stabilized.
2. The applicant is given the choice of the following two methods of protecting areas of disturbed earth this late in the season:
 - a. Spreading hay generously over disturbed areas and seeding with winter rye, or
 - b. Removing from the site material excavated for the three support poles.
3. Silt fencing is to remain in place until disturbed areas are stabilized, and then removed.
4. Regardless of the choice made in section 2 above, areas of exposed earth are to be spread with hay for erosion protection.

This approval is valid for a period of five years (until December 2, 2018), unless additional time is requested by the applicant and granted by the Inland Wetlands Agency. The applicant shall notify the Wetlands Agent before any work begins, and all work shall be completed within one year. Any extension of the activity period shall come before this Agency for further review and comment. MOTION PASSED UNANIMOUSLY.

New Business: None.

Other Communications and Bills: Noted.

Adjournment: The Chairman declared the meeting adjourned at 7:10 p.m.

Respectfully submitted,

Katherine Holt, Secretary

PAGE
BREAK

Memorandum:

January 13, 2014

To: Inland Wetland Agency
From: Grant Meitzler, Inland Wetland Agent
Re: Monthly Business

W1419 - Chernushek - hearing on Order

- 3.10.09: The hearing on the Order remains open and should continue until the permit application under consideration is acted upon.
(The Order was dropped on approval of the application required in the Order.)
- 4.30.09: Former rye grass seeding is beginning to show green. I spoke with Mr. Chernushek this afternoon who indicated health problems that delayed his starting but indicated he will be working this weekend. I will update on this Monday evening.
- 5.26.09: A light cover of grass growth has come in. Mr. Chernushek indicates health problems and two related deaths have delayed his start of work since the permit approval was granted. It appears that some light work has started. He has further indicated that he will start a vacation on June 22, 2009 to finish the work.
- 6.13.09: Work is underway.
- 6.21.09: Bulldozer work has been completed - finish work remains. The additional silt fencing has been placed along the northerly wetlands crossing, and the additional pipe under the southerly crossing has been installed. Remaining work includes finish grading along edges, spreading stockpiled topsoil, and establishing grass growth.
- 7.01.09: I spoke with Mr. Chernushek who indicated he expects work to be completed by September 1, 2009. (Site photo attached).
- 9.03.09: Mr. Chernushek has been working on levelling and grading. The formerly seeded areas have become fairly thick growth surrounding the central wet areas. He has further indicated that with the combination of weather and the slower moving of earth with the payloader compared to the earlier rented bulldozer has led him to contact contractors for earth moving estimates which have not yet been received. The site is not yet finished but has remained quite stable.
- 9.12.09: I met with Mr. Chernushek today and discussed again what his plans are for stabilizing this work site.
- 10.01.09: Mr. Chernushek indicated he has not heard back from the contractor he had spoken with about removing material, and is in progress of contacting others. In discussion is removal of material from the site either within the 100 cubic yard limit or obtaining a permit for such removal.
- 10.28.09: Mr. Chernushek has indicated he has made arrangements with DeSiato Sand & Gravel to remove 750 cubic yards of material. Staff is in the process of clarifying permit requirements.

W1445 - Chernushek - application for gravel removal from site

- 11.30.09: Packet of information representing submissions by Mr. Chernushek, Mr. DeSiato and myself is in this agenda packet as Mr. Chernushek's request for modification.
- 12.29.09: Preparation of required information for PZC special permit application is in progress. Tabling any action until the February 1, 2010 meeting is recommended.
- 1.12.10: 65 day extension of time received.
- 2.18.10: No new information has been received.

- 2.25.10: This application has been **withdrawn**.
- 6.30.10: As viewed from the adjacent property, the upstream and downstream areas have grown to a decent protected surface. I did not see indication of sediment movement.
- 10.26.10: A sale of the East portion of the Chernushek property has been in negotiation.
- 12.27.10: The property exchange has been completed. The owner is now the neighboring property owner Bernie Brodin. He has indicated his intention to stabilize the area as weather permits.
- 4.25.11: Mr. Brodin indicates he is starting with grading and spreading hay and seed to stabilize disturbed areas.

Mansfield Auto Parts - Route 32

- 1.14.13: Inspection - no vehicles are within 25' of wetlands.
- 2.25.13: Inspection - car storage areas are snowed in, not accessible.
- 3.12.13: Inspection - no vehicles are within 25' of wetlands.
- 4.25.13: Inspection - no vehicles are within 25' of wetlands.
- 5.17.13: Inspection - no vehicles are within 25' of wetlands.
- 6.06.13: Inspection - no vehicles are within 25' of wetlands.
- 7.10.13: Inspection - no vehicles are within 25' of wetlands.
- 7.22.13: Inspection - no vehicles are within 25' of wetlands.
- 8.13.13: Inspection - no vehicles are within 25' of wetlands.
- 9.20.13: Inspection - no vehicles are within 25' of wetlands.
- 10-10-13: Inspection - no vehicles are within 25' of wetlands.
- 11.15.13: Inspection - no vehicles are within 25' of wetlands.
- 12.20.13: Inspection - no vehicles are within 25' of wetlands.
- 1.13.14: Inspection - no vehicles are within 25' of wetlands.

Memorandum:

January 29, 2014

To: Inland Wetland Agency

From: Grant Meitzler, Inland Wetland Agent

Re: New Business for February 3, 2013 meeting

New Applications:

W1526 - Frank Costigliola - 111 Dunham Pond Rd - 12 X 14 Deck addition

	yes	no
	-----	-----
fee paid	x	
notice to neighbors	x	
map dated	January 29, 2014	

This proposal is for a 12'x 14' addition to an existing deck. The addition is to be 29' from the Dunham Pond Brook, and is to be supported on concrete piers.

Receipt and referral to the Conservation Commission for their review is appropriate.

W1527 - C Tec Solar - 480 Woodland Rd -

	yes	no
	-----	-----
fee paid	x	
notice to neighbors	x	
map dated	August 14, 2013	

This proposal is for three pole mounted solar arrays. Two poles will have an array of twelve panels and one pole will have a ten panel array. As shown on the plan, it appears the panels are as close to wetlands as 25'.

Receipt and referral to the Conservation Commission for their review is appropriate.

Agent Approvals:

1. Mango - 253 Spring Hill Rd - 9'x 12' shed
2. Robarge - 66 White Oak Road - 11'6" x 16' shed

PAGE
BREAK

LEGAL NOTICE

The Wetlands Agent has issued an administrative approval for:

1. A 9' x 12' storage shed in the upland review area at 253 Spring Hill Road.
2. A 11'6" x 16' storage in the upland review area at 66 White Oak Road.

Information on the application may be seen in the Planning Office at 4 South Eagleville Rd

Grant Meitzler, Wetlands Agent

TO BE PUBLISHED Tuesday, December 31, 2013

****PLEASE CHARGE TO THE MANSFIELD PZC/TWA ACCOUNT**

Legal Notice

The Wetlands Agent has issued an administrative approval for:

1. A 9' x 12' storage shed in the upland review area at 253 Spring Hill Road.
2. A 11'6" x 16' storage in the upland review area at 66 White Oak

Road.
Information on the application may be seen in the Planning Office at 4 South Eagleville Rd.

Grant Meitzler,
Wetlands Agent

The Chronicle

12-31-13

PAGE
BREAK

APPLICATION FOR PERMIT
MANSFIELD INLAND WETLANDS AGENCY
4 SOUTH EAGLEVILLE ROAD, STORRS, CT 06268
TEL: 860-429-3334 OR 860-429-3330
FAX: 860-429-6863

FOR OFFICE USE ONLY	
File #	1526
Fee Paid	\$185-
Date Received	1-27-14

Applicants are referred to the Mansfield Inland Wetlands and Watercourses Regulations for complete requirements, and are obligated to follow them. For assistance, please contact Grant Meitzler, Inland Wetlands Agent at the telephone numbers above.

Please print or type or use similar format for computer; attach additional pages as necessary.

Part A - Applicant

Name FRANK COSTIGLIOLA

Mailing Address 111 Dunham Pond Rd.
STORRS, CT Zip 06268

Telephone-Home 860-477-0854 Telephone-Business 860-420-8118 Cell

Title and Brief Description of Project
12' x 14' addition onto existing deck. Deck will be closed in
with screens, windows, + roof but no heating or cooling.

Location of Project 111 Dunham Pond Rd. Storrs,

Intended Start Date Ca. April 2014

Part B - Property Owner (if applicant is the owner, just write "same")

Name same

Mailing Address _____

Zip _____

Telephone-Home same Telephone-Business _____

Owner's written consent to the filing of this application, if owner is not the applicant:

Signature _____ date _____

Applicant's interest in the land: (if other than owner) _____

Part C - Project Description (attach extra pages, if necessary)

1) Describe in detail the proposed activity here or on an attached page. (See guidelines at end of application - page 6.)

Please include a description of all activity or construction or disturbance:

- a) in the wetland/watercourse
- b) in the area adjacent to (within 150 feet from the edge of) the wetland/watercourse, even if wetland/watercourse is off your property

No activity in the wetland / water course

Deck will extend to 29' from Dunham Pond Brook (at its widest, winter extent)

Deck construction will require 6 piers, none closer than 29' to the brook.

2) Describe the amount or area of disturbance (in square feet or cubic yards or acres):

- a) in the wetland/watercourse
- b) in the area adjacent to (within 150 feet from the edge of) the wetland/watercourse, even if wetland/watercourse is off your property

14' x 12' - but minimal disturbance within 150' of wetland / watercourse

3) Describe the type of materials you are using for the project:

concrete piers, pressure treated posts + lumber

a) include type of material used as fill or to be excavated

b) include volume of material to be filled or excavated

none

4) Describe measures to be taken to minimize or avoid any adverse impacts on the wetlands and regulated areas (silt fence, staked hay bales or other Erosion and Sedimentation control measures).

Construction will remain 29' away from stream bank

Part D - Site Description

Describe the general character of the land. (Hilly? Flat? Wooded? Well drained? etc.)

incline, wooded, well drained

Part E - Alternatives

Have you considered any alternatives to your proposal that would meet your needs and might have less impact on the wetland/watercourse? Please list these alternatives.

No

Part F - Map/Site Plan (all applications)

1) Attach to the application a map or site plan showing existing conditions and the proposed project in relation to wetland/ watercourses. Scale of map or site plan should be 1" = 40'; if this is not possible, please indicate the scale that you are using. A sketch map may be sufficient for small, minor projects. (See guidelines at end of application – page 6.)

2) Applicant's map date and date of last revision _____

3) Zone Classification _____

4) Is your property in a flood zone? Yes No Don't Know

Part G - Major Applications Requiring Full Review and a Public Hearing

See Section 6 of the Mansfield Regulations for additional requirements.

Part H - Notice to Abutting Property Owners

1) List the names and addresses of abutting property owners

Name	Address
Tom + Lee Terry	114 Danham Pond Rd. STORRS, CT 06268
Baladji + Mohini Mundkur	431 Bentley Dr., Naples, FL 34110

2) **Written Notice to Abutters.** You must notify abutting property owners by certified mail, return receipt requested, stating that a wetland application is in progress, and that abutters may contact the Mansfield Inland Wetlands Agent for more information. Include a brief description of your project. Postal receipts of your notice to abutters must accompany your application. (This is not needed for exemptions).

Part I - Additional Notices, if necessary

- 1) Notice to Windham Water Works is attached. If this application is in the public watershed for the Windham Water Works (WWW), you must notify the WWW of your project within 7 days of sending the application to Mansfield--sending it by certified mail, return receipt requested. Contact the Mansfield Inland Wetlands Agent to find out if you are in this watershed.
- 2) Notice to Adjoining Town. If your property is within 500 feet of an adjoining town, you must also send a copy of the application, on the same day you sent one to Mansfield, to the Inland Wetlands Agency of the adjoining town, by certified mail, return receipt requested.
- 3) The Statewide Reporting Form (attached) shall be part of the application and specified parts must be completed and returned with this application.

Part J - Other Impacts To Adjoining Towns, if applicable

- 1) Will a significant portion of the traffic to the completed project on the site use streets within the adjoining municipality to enter or exit the site? ___ Yes ___ No Don't Know
- 2) Will sewer or water drainage from the project site flow through and impact the sewage or drainage system within the adjoining municipality? ___ Yes ___ No Don't Know
- 3) Will water run-off from the improved site impact streets or other municipal or private property within the adjoining municipality? ___ Yes ___ No Don't Know

Part K - Additional Information from the Applicant

Set forth (or attach) any other information which would assist the Agency in evaluating your application. *(Please provide extra copies of any lengthy documents or reports, and extra copies of maps larger than 8.5" x 11", which are not easily copied.)*

Part L - Filing Fee

Submit the appropriate filing fee. (Consult Wetlands Agent for the fee schedule available in the Mansfield Inland Wetlands and Watercourses Regulations.)

___ \$1,000. ___ \$750. ___ \$500. ___ \$250. ___ \$125. ___ \$100. ___ \$50. ___ \$25.

___ \$60 State DEP Fee

Note: The Agency may require you to provide additional information about the regulated area which is the subject of the application, or about wetlands or watercourses affected by the regulated activity. If the Agency, upon review of your application, finds the activity proposed may involve a "significant activity" as defined in the Regulations, additional information and/or a public hearing may be required.

The undersigned applicant hereby consents to necessary and proper inspections of the above mentioned property by members and agents of the Inland Wetlands Agency, at reasonable times, both before and after the permit in question has been granted by the Agency.


Applicant's Signature

27 January 2014
Date

PAGE
BREAK

APPLICATION FOR PERMIT
MANSFIELD INLAND WETLANDS AGENCY
4 SOUTH EAGLEVILLE ROAD, STORRS, CT 06268
TEL: 860-429-3334 OR 860-429-3330
FAX: 860-429-6863

FOR OFFICE USE ONLY
File # 1527
Fee Paid \$185.00
Date Received 1-6-14

Applicants are referred to the Mansfield Inland Wetlands and Watercourses Regulations for complete requirements, and are obligated to follow them. For assistance, please contact Grant Meitzler, Inland Wetlands Agent at the telephone numbers above.

Please print or type or use similar format for computer; attach additional pages as necessary.

Part A - Applicant

Name C-Teq Solar

Mailing Address 542 Hopmeadow St Pmb 130

Simsbury CT Zip 06070

Telephone-Home _____ Telephone-Business 860-217-0885

Title and Brief Description of Project
Installation of (3) Solar pole mounts

Location of Project 480 Woodland Rd

Intended Start Date _____

Part B - Property Owner (if applicant is the owner, just write "same")

Name Denn Schworer

Mailing Address 480 Woodland Rd

Mansfield CT Zip 06368

Telephone-Home 860-429-7751 Telephone-Business 860-243-7692

Owner's written consent to the filing of this application, if owner is not the applicant:

Signature [Signature] date 12/24/2013

Applicant's interest in the land: (if other than owner) _____

Part C - Project Description (attach extra pages, if necessary)

1) Describe in detail the proposed activity here or on an attached page. (See guidelines at end of application – page 6.)

Please include a description of all activity or construction or disturbance:

- a) in the wetland/watercourse
- b) in the area adjacent to (within 150 feet from the edge of) the wetland/watercourse, even if wetland/watercourse is off your property

1) Installation of (3) solar pole mounts (1) pole will be dug 10 1/2 feet deep and the other (2) poles will be dug 11 1/2 feet deep. Trenching for solar conduit will be done using a ditch watch. This trench will be no more than 20" deep and 8" wide. This trench will be approximately 110 feet from home to solar array.

2) Describe the amount or area of disturbance (in square feet or cubic yards or acres):

- a) in the wetland/watercourse
- b) in the area adjacent to (within 150 feet from the edge of) the wetland/watercourse, even if wetland/watercourse is off your property

a) 0 disturbance in wetlands area

b) The two arrays with 12 panels will use 2.67 cubic yards of displaced soil. The array with 10 panels will use 1.2 cubic yards of displaced soil.

3) Describe the type of materials you are using for the project: Excavator, Ditch watch, concrete, shingles, DPX pole mounts (3), conduit for solar electric.

- a) include **type** of material used as fill or to be excavated Concrete
- b) include **volume** of material to be filled or excavated 2 Arrays - 2.67 cubic yards, 1 Array - 1.2 cubic yards

4) Describe measures to be taken to minimize or avoid any adverse impacts on the wetlands and regulated areas (silt fence, staked hay bales or other Erosion and Sedimentation control measures).

We will use a ditch watch for trenching to minimize the displacement of soil.

Part D - Site Description

Describe the general character of the land. (Hilly? Flat? Wooded? Well drained? etc.)

Wooded

Part E - Alternatives

Have you considered any alternatives to your proposal that would meet your needs and might have less impact on the wetland/watercourse? Please list these alternatives.

Yes, Asked Homeowner if they wanted water on their roof.

Part F - Map/Site Plan (all applications)

1) Attach to the application a map or site plan showing existing conditions and the proposed project in relation to wetland/ watercourses. Scale of map or site plan should be 1" = 40'; if this is not possible, please indicate the scale that you are using. A sketch map may be sufficient for small, minor projects. (See guidelines at end of application – page 6.)

2) Applicant's map date and date of last revision 4/7/13

3) Zone Classification RAR90

4) Is your property in a flood zone? Yes No Don't Know

Part G - Major Applications Requiring Full Review and a Public Hearing

See Section 6 of the Mansfield Regulations for additional requirements.

Part H - Notice to Abutting Property Owners

1) List the names and addresses of abutting property owners

Name	Address
Scott and Carole Lynn Sheldon	447 Woodland Rd
Sequoie Grant	444 Woodland Rd
Bruce and Dana Clavette	483 Woodland Rd

2) **Written Notice to Abutters.** You must notify abutting property owners by certified mail, return receipt requested, stating that a wetland application is in progress, and that abutters may contact the Mansfield Inland Wetlands Agent for more information. Include a brief description of your project. Postal receipts of your notice to abutters must accompany your application. (This is not needed for exemptions).

Part I - Additional Notices, if necessary

- 1) Notice to Windham Water Works is attached. If this application is in the public watershed for the Windham Water Works (WWW), you must notify the WWW of your project within 7 days of sending the application to Mansfield--sending it by certified mail, return receipt requested. Contact the Mansfield Inland Wetlands Agent to find out if you are in this watershed.
- 2) Notice to Adjoining Town. If your property is within 500 feet of an adjoining town, you must also send a copy of the application, on the same day you sent one to Mansfield, to the Inland Wetlands Agency of the adjoining town, by certified mail, return receipt requested.
- 3) The Statewide Reporting Form (attached) shall be part of the application and specified parts must be completed and returned with this application.

Part J - Other Impacts To Adjoining Towns, if applicable

- 1) Will a significant portion of the traffic to the completed project on the site use streets within the adjoining municipality to enter or exit the site? ___ Yes No ___ Don't Know
- 2) Will sewer or water drainage from the project site flow through and impact the sewage or drainage system within the adjoining municipality? ___ Yes No ___ Don't Know
- 3) Will water run-off from the improved site impact streets or other municipal or private property within the adjoining municipality? ___ Yes No ___ Don't Know

Part K - Additional Information from the Applicant

Set forth (or attach) any other information which would assist the Agency in evaluating your application. (*Please provide extra copies of any lengthy documents or reports, and extra copies of maps larger than 8.5" x 11", which are not easily copied.*)

Part L - Filing Fee

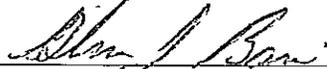
Submit the appropriate filing fee. (Consult Wetlands Agent for the fee schedule available in the Mansfield Inland Wetlands and Watercourses Regulations.)

___ \$1,000. ___ \$750. ___ \$500. ___ \$250. ___ \$125. ___ \$100. ___ \$50. ___ \$25.

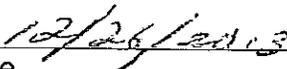
___ \$60 State DEP Fee

Note: The Agency may require you to provide additional information about the regulated area which is the subject of the application, or about wetlands or watercourses affected by the regulated activity. If the Agency, upon review of your application, finds the activity proposed may involve a "significant activity" as defined in the Regulations, additional information and/or a public hearing may be required.

The undersigned applicant hereby consents to necessary and proper inspections of the above mentioned property by members and agents of the Inland Wetlands Agency, at reasonable times, both before and after the permit in question has been granted by the Agency.



Applicant's Signature



Date

PHOTOVOLTAIC PROPOSAL LAYOUT

DECSOLAR
 542 Hopmeadow Street
 P.O. Box 130
 Simsbury, CT 06070
 P: 1-800-52-SOLAR
 F: 1-860-458-9756
 www.decsolar.com

DESIGNER: DECSOLAR, INC. DATE: 8/14/13
 CHECKED: [Signature] DATE: 8/14/13
 APPROVED: [Signature] DATE: 8/14/13

CLIENT: TIERNEY

LOCATION: 480 WOODLAND RD
 MANSFIELD, CT

PROJECT DESCRIPTION: 8.160WATT SOLAR
 ELECTRIC SYSTEM

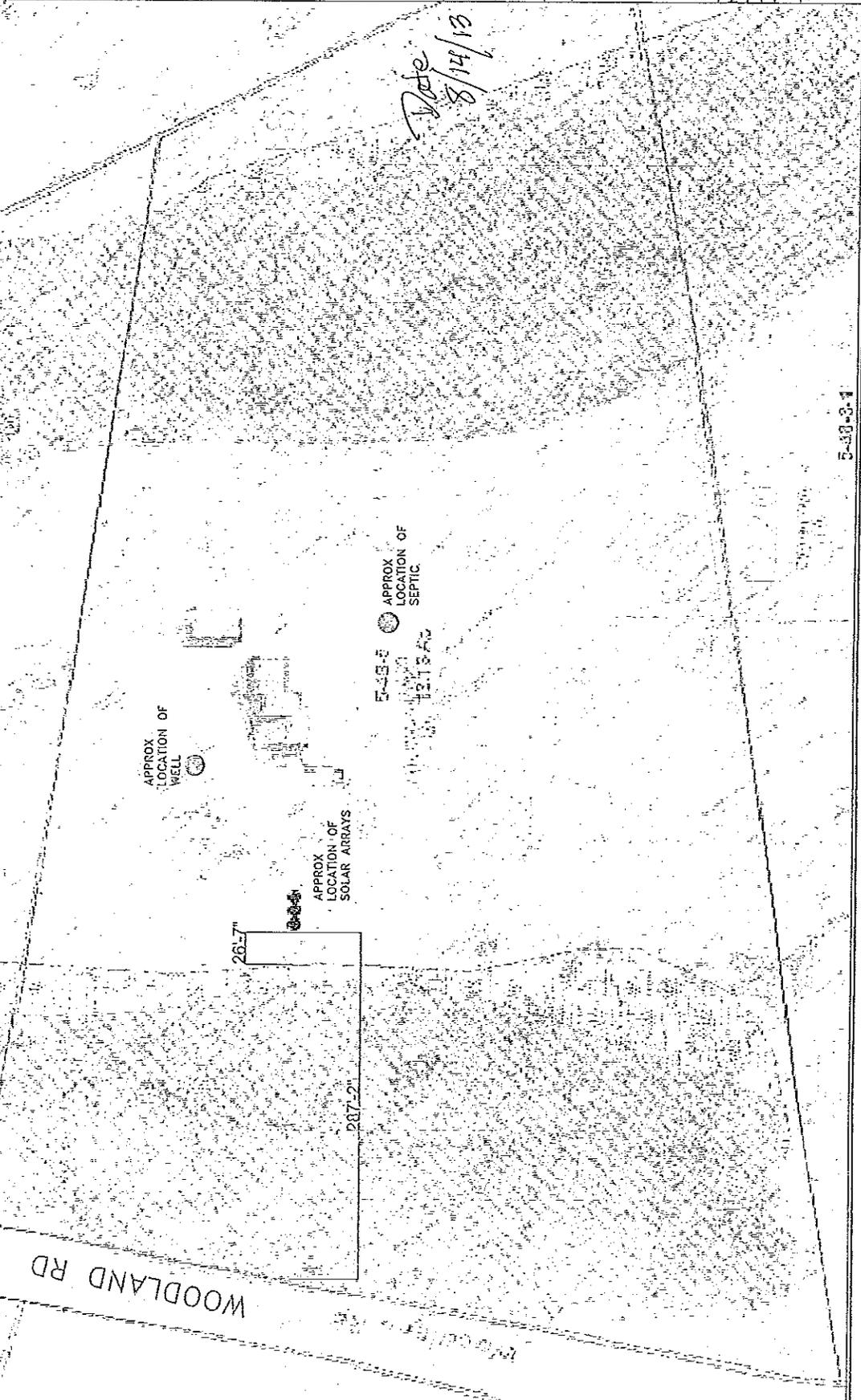
LOAD CALCULATIONS:
 ARRAY WEIGHT: N/A LBS.
 # OF SOLAR STANDOFFS: N/A
 WEIGHT PER STANDOFF: N/A LBS.
 ARRAY SQ. FT.: N/A SQ. FT.
 ROOFING MATERIAL: N/A
 SIZE: N/A
 SPAN: N/A
 JOIST SPACS: N/A
 SIZE: N/A
 SPAN: N/A

DESIGNER: DECSOLAR DATE: 8/14/13
 DRAWN BY: [Signature]
 CHECKED BY: [Signature]
 APPROVED BY: [Signature]

ARRAY SPECIFICATIONS:
 -34- PRIMO DIAMOND
 240WATT MODULES
 -3- POWER-ONE PV3000
 INVERTERS

MODULE SPECIFICATIONS:
 -240W MODULES
 -64.6"X39.1"X1.8"
 -44.1 LBS

SHEET: L-1



5-15-5

PAGE
BREAK



Who We Are and What We Do

The Connecticut Federation of Lakes is a non-profit, membership organization – of shoreline property owners, lake users, community associations and others – that cares about and works to protect and improve the health of lakes and ponds in Connecticut.

CFL is the voice for lakes in Connecticut.

We work for all who enjoy the State's over 3,000 named lakes and ponds. These are beautiful yet fragile resources that yield immense recreational, commercial, environmental and aesthetic benefits.

CFL advocates for legislation and regulations at the state and local level. These actions help preserve, protect and enhance the health and quality of our lakes and ponds and the watersheds that surrounds them.

CFL increases public awareness – especially among shoreline property owners and all lake users – of the emerging or continuing threats to the health of Connecticut's lakes and ponds and the actions that are needed to be "LakesSmart."

CFL helps shoreline property owners and lake users organize into local, community associations so they can better focus on local priorities, and reach out to other residents and users to enlist their aid in protecting nearby lakes and watersheds.

Our mission is to work together – for you and with you – to achieve healthier lakes and watersheds across Connecticut.

To learn more or to join, contact us at:

www.ctlakes.org.

CONNECTICUT FEDERATION OF LAKES

How You Can Help

- > Take the "LakesSmart Pledge"
- > Participate in the CFL's Secchi Disk Monitoring Program
- > Support the CFL!

Donations in any amount are appreciated!

We invite you to learn more – or join with us as the Voice for Connecticut's Lakes! Just contact us online at: www.ctlakes.org

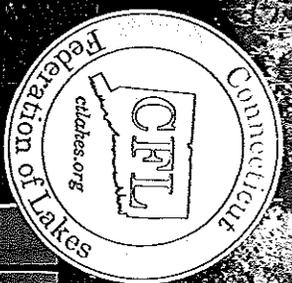
Please mail checks payable to the CFL and other inquiries to:

CFL
PO Box 216
Windsor, CT 06095

"The only way small lakes will receive the attention they deserve will be through the strengthening of private, non-profit lake management associations. Through their bylaws and budgets, they can accomplish what agencies cannot, which is to concentrate attention on a single place, rather than many, to protect their own little shared piece of heaven."

"I wrote a similar statement several years ago for my book *Beyond Walder* (2009). The statement is just as true today, if not more so. And the CFL is the single most effective means for building these essential groups in the state."

Robert Thonson, PhD
Faculty, University of Connecticut
Columnist for *Harford Current*
Author of *Beyond Walder* (2009)

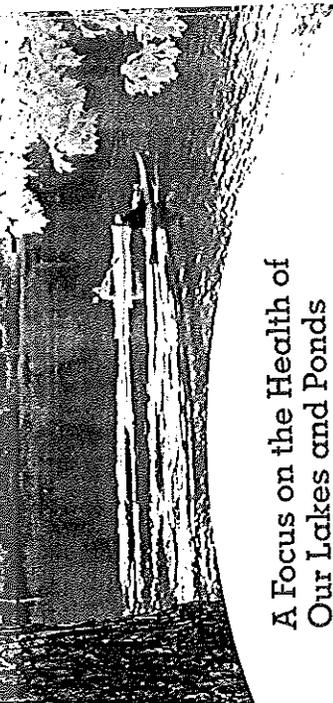


THE VOICE FOR CONNECTICUT'S LAKES



CONNECTICUT
FEDERATION OF LAKES

www.ctlakes.org



A Focus on the Health of Our Lakes and Ponds

Connecticut's lakes and ponds are fragile ecosystems – and the environmental threats they face are varied and serious. These include:

- Overdevelopment of the shoreline and nearby watershed;
 - Increasing amounts of storm water runoff and erosion;
 - Nutrient-loading due to excessive use of lawn fertilizers and failing septic systems; and
 - The proliferation of exotic species.
- The good news – these threats are also manageable and some even reversible.
- The CFL alerts the public to the increasing and evolving threat of environmental degradation. We **enlist** and **mobilize** similar-minded people at the local level and **collaborate** with other CT organizations with mutual goals and objectives so our efforts have more impact.

CONNECTICUT FEDERATION OF LAKES

EDUCATION

The CFL regularly hosts meetings of lake and watershed advocacy groups in CT to share information, coordinate efforts and establish priorities.

We collaborate with regional and national lake advocacy groups. We have served as the host for the prestigious North American Lake Management Society (NALMS) Conference in 2009 and have hosted major conferences of the New England chapter of NALMS.

The CFL coordinates closely with experts and regulatory authorities in the Connecticut Department of Energy and Environmental Protection (CT DEEP) and the CT Agricultural Experiment Station.

We bolster public awareness of the need to protect lakes and watersheds via an annual outreach effort each summer. The CFL distributes information materials, conduct attention-getting activities, and invite elected local officials to participate in our Lakes Awareness Week each summer.



The CFL heightened statewide awareness of the importance of lakes and ponds by successfully advocating for the inclusion of lakes and ponds in the *State's Plan of Conservation and Development*, assuring that each of the 169 municipalities consider the need to protect these important natural resources.

We successfully advocated and helped pass important legislation limiting the use of phosphorus fertilizers on lawns. This helps reduce a significant source of cultural eutrophication, or the nutrient enrichment of our lakes and ponds, which can result in the growth of noxious algae blooms.

The CFL was key in helping develop and pass legislation concerning the control of invasive aquatic plant species. We successfully advocated for the need to broaden invasive species legislation to encompass newer threats from invasive animal species, such as zebra mussels.

Our Accomplishments – How We Help

► ADVOCACY

The CFL helped CT DEEP develop a grant program to aid lake stakeholders who want to organize as a lake or watershed association. This provided support for start-up costs as well as funding for existing groups that wanted to become more active in protecting lakes and watersheds.

We aided the CT DEEP effort to develop and expand an innovative volunteer program to help stem the spread of invasive species. Volunteer Launch Monitors are trained in identifying invasive species and the proper method of inspecting and decontaminating boats, trailers and other marine gear.

The CFL monitors and shares successful efforts to bolster local land use regulations that are aimed at protecting lakes and watersheds. These include Plans of Conservation and Development, Zoning Regulations, and Inland Wetlands regulations for lakeside development and storm water management.

We assist lake groups in developing the capability to monitor water clarity long-term via unique tools called Secchi disks. Since 2004 we've also compiled and shared the water quality data to track regional and statewide trends.

November/December 2013

Connecticut Wildlife

CONNECTICUT DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION
BUREAU OF NATURAL RESOURCES
DIVISIONS OF WILDLIFE, INLAND & MARINE FISHERIES, AND FORESTRY



From the Director's Desk



In the late 1960s, on a family summer vacation of camping at a favorite state park (the only kind of vacation our family ever took), my nephew and I would ride our bicycles everywhere. Mine was a Rollfast Roadmaster Red White 'street bike' that, by today's standards, would be more akin to a mountain bike, just without all the gears. No, this was a single speed wonder, with 24-inch fat tires, full fenders, a chain guard, and a single rear coaster brake. It was perfect for rolling over park trails, jumping roots, and skidding sideways in loose gravel when you 'jammed the brakes.' I had always been a little envious of Tod, the oldest of my nephews, over his Schwinn Sting-Ray Orange Krate 5-speed with a sissy bar, banana seat, and ape-hanger handlebars. But, that didn't slow either of us down. We were born to ride.

One of our excursions took us down a trail along a forested ridge, paralleling the St. Croix River below. On one particular section of the ridge trail, we hopped off the bikes, pushed down the kick stands, and explored the broken rock crevice near the overlook. That day Tod got the find of the summer – a genuine arrowhead, lost, we were sure, by some long forgotten Indian brave whose arrow missed a mighty buck. We sat on the edge of the ledge, feet dangling and swinging back and forth as we made up stories of what hunting must have been like, making your own bow from the core of a mid-aged ash and strings of deer sinew, rawhide, or gut. We argued over whether the arrow shafts were made of dogwood or birch and if the fletching came from wild turkey or eagle feathers. In short, it is amazing what such a find can become in the imagination of a pair of 11-year-old boys.

Fast forward to 2013, more years later than I care to think, where we are enjoying another similarly enchanting discovery – ancient Indian ceremonial rock mounds. This find happened during a recent project to create young forest habitats for New England cottontail, woodcock, ruffed grouse, and other scrub-shrub forest dwelling species. During tree removal operations, we were approached by a senior tribal member whose ancestors lived in the area. He had happened by the project site following a day of small game hunting. Knowing the property well, he was disturbed to see we were working among dozens of ceremonial rock piles, piles we had no idea existed. Within a matter of hours, we had enlisted the assistance of the State Archeologist, the State Indian Affairs Officer and Chairman of the Native American Advisory Council, the Tribal Historical Preservation Officer, and our contractors to locate, mark, and protect each of the mounds while the habitat work was completed. Once again, that 11-year-old's imagination is alive with images of tribal elders toiling to construct totems to the spirits of the forest and wildlife. That night, I dreamt of Native Americans, dressed in ceremonial skins and head dresses, collecting and piling rocks to honor the spirits, as well as a landscape not so different from today, with vast expanses of mature forest, abundant deer and waterfowl, and natural wonders waiting to be discovered.

Our public lands are and remain places of wonder; places where each of us can relive our youth and dream the dreams of the enchanted. Take a walk off the beaten path and let your imagination run.

Rick Jacobson, DEEP Wildlife Division Director

Cover:

Hang up a suet feeder at your winter bird feeding station and you are sure to get a visit from a red-bellied woodpecker. This woodpecker also stores food away for winter by hammering acorns, berries, and insects into bark and tree crevices to be eaten later.

Photo courtesy of Paul J. Fusco

Connecticut Wildlife

Published bimonthly by

Connecticut Department of
Energy and Environmental Protection
Bureau of Natural Resources

Wildlife Division

www.ct.gov/deep

Commissioner

Daniel C. Esty

Deputy Commissioner

Susan Whalen

Chief, Bureau of Natural Resources

William Hyatt

Director, Wildlife Division

Rick Jacobson

Magazine Staff

Managing Editor Kathy Herz

Production Editor Paul Fusco

Contributing Editors: Mike Beauchene (Inland Fisheries)

Penny Howell (Marine Fisheries)

James Parda (Forestry)

Circulation Trish Cernik

Wildlife Division

79 Elm Street, Hartford, CT 06106-5127 (860-424-3011)

Office of the Director, Recreation Management, Technical Assistance,
Natural History Survey

Sessions Woods Wildlife Management Area

P.O. Box 1550, Burlington, CT 06013 (860-675-8130)

Wildlife Diversity, Birds, Furbearers, Outreach and Education, Habitat
Management, Conservation Education/Firearms Safety, Connecticut
Wildlife magazine

Franklin Wildlife Management Area

391 Route 32, N. Franklin, CT 06254 (860-642-7239)

Migratory Birds, Deer/Moose, Wild Turkey, Small Game, Wetlands
Habitat and Mosquito Management, Conservation Education/Firearms
Safety

Eastern District Area Headquarters

209 Hebron Road, Marlborough, CT 06447 (860-295-9523)

State Land and Private Land Habitat Management

Connecticut Wildlife magazine (ISSN 1087-7525) is published bimonthly by the Connecticut Department of Energy & Environmental Protection Wildlife Division. Send all subscription orders and address changes to Connecticut Wildlife, Sessions Woods WMA, P.O. Box 1550, Burlington, CT 06013. Subscription rates are \$8 for one year, \$15 for two years, and \$20 for three years. No refunds. Periodical postage paid at Bristol, CT. Postmaster: Please send all address changes to Connecticut Wildlife, P.O. Box 1550, Burlington, CT 06013.

www.ct.gov/deep/wildlife www.facebook.com/CTFishandWildlife

E-mail: deep.ctwildlife@ct.gov Phone: 860-675-8130



The Federal Aid in Wildlife Restoration Program was initiated by sportsmen and conservationists to provide states with funding for wildlife management and research programs, habitat acquisition, wildlife management area development, and hunter education programs. Connecticut Wildlife contains articles reporting on Wildlife Division projects funded entirely or in part with federal aid monies.



The Connecticut Department of Energy and Environmental Protection is an Affirmative Action/Equal Opportunity Employer that is committed to complying with the requirements of the Americans with Disabilities Act. Please contact us at 860-418-5910 or deep.accommodations@ct.gov if you have a disability and need a communication aid or service; have limited proficiency in English and may need information in another language; or if you wish to file an ADA or Title VI discrimination complaint.

Copyright 2013 by the Connecticut Wildlife Division. The Wildlife Division grants permission to reprint text, not artwork or photos, provided the Wildlife Division is credited. Artwork and photographs printed in this publication are copyrighted by the CT DEEP Wildlife Division. Any unauthorized use of artwork and photos is prohibited. Please contact the managing editor at the Sessions Woods office to obtain permission for reprinting articles.

Printed on recycled paper

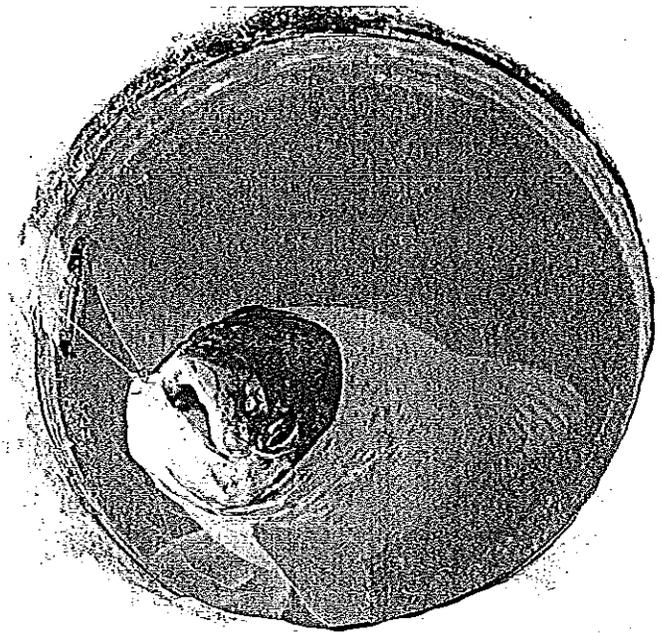
Fishing the "Hard Water" Is a "Hole" New Adventure!

By Justin Wiggins and Tom Bourret, DEEP Inland Fisheries Division

Apple picking season is over and old man winter has started to send his icy fingers out from the edge of the pond. With the wintery change, many anglers have put away their traditional fishing gear and lament the end of fishing for yet another year. If this sounds like you, we are encouraging you to try ice fishing or "hard water" angling. With access to over 180 lakes and ponds in Connecticut, ice fishing lends itself as an inexpensive wintertime family activity that provides fresh air, exercise, quality time in the outdoors, and, if you are lucky, a nice fish meal! Ice fishing is a social sport, and most anglers will be happy to share knowledge and tips with you. Following is an introduction to several aspects of the sport: safety, equipment, rules and regulations, and how fish behave under the ice.

Safety

The most important facet of ice fishing is safety. Walking on water can be tricky business. Ice can be slippery so it is a good idea to use footwear that will prevent



an accidental fall. Ice cleats or "creepers" have built in spikes to grip the ice and are designed to slip over winter boots. Another safety concern is thickness of the ice. Check ice thickness near the shore as you make your way out. Ice thickness is not always uniform and may vary within a lake or pond. Currents, springs, and aquatic vegetation all affect how ice forms. As a rule of thumb, four inches of clear black ice will support one person on foot. It is good practice to carry a rope and flotation device, whistle, and a set of "safety hand spikes" to pull you out of the water in the rare case of a breakthrough. Avoid going alone; bring a friend or your family to enjoy the day with you!

Finally, stay warm. Dress in layers, avoiding cotton. Your outermost layer should be wind-stopping. Waterproof insulated boots and thick wool socks will keep your feet warm and dry. Mittens are warmer than gloves and a winter hat is a must. Sunglasses will diminish the glare on those brilliant sunny winter days.

Equipment

To get started, all you need is a tool to break or cut through the ice, something to fish with, and something to attract fish. Start with basic equipment and expand your ice fishing tackle collection as you figure out what you need.

Breaking the Ice: Cutting a hole in the ice can be accomplished by using an ice chisel (or spud), a hand-powered auger, or a propane or gas powered auger. Hand augers are relatively inexpensive and light weight.

continued on next page





The northern pike is the largest strictly freshwater gamefish in Connecticut and remains active all winter long. This angler will vouch that battling a fish of this size while on the ice is quite the thrill.

Keeping the Hole Open: A skimmer, or ice ladle, is the easiest way to clear ice chips and slush from the hole. Occasionally, the hole may freeze solid while you are fishing. No worries, use your skimmer to re-open the hole.

Angling Devices: Ice fishing devices differ from traditional gear as there is no casting involved. Simply drop a line through the hole and you are in business. Two types of devices are "jigging rods" and "tip-ups." Jigging rods are short

and sensitive, measuring only 20 to 30 inches long. The jig is tipped with live or imitation insect larvae, which are sold in small cups or jars that should be kept in a pocket to keep from freezing. The three most common are mousees, wax worms, or spikes. They are fished by jigging a lure and bait up and down to create vibrations, which will attract curious fish.

Tip-ups are offered in a variety of styles, but all operate under the same principle. They are baited with a live shiner that is dropped through the hole to within a few feet of the bottom. A bait bucket is used to transport the shiners, keeping them alive. When a fish strikes the bait and makes a run, a spring-loaded

electronic fish finders, camp chairs, and other comforts.

Rules and Regulations

Check the definition section of the current Connecticut Angler's Guide for special ice fishing rules and how to label your gear. In Connecticut, each ice angler is allowed up to six angling devices, which can be a combination of tip-ups and jigging rods. The Angler's Guide describes special rules and regulations for the body of water you will be fishing, along with creel and size limits if you are planning on harvesting your catch. As with traditional fishing, all anglers ages 16 and up must possess a valid fishing license (the revenue from which goes to support DEEP fisheries and wildlife management programs).

Life Under the Ice

Fish are cold-blooded animals so the temperature of their blood is the same as the environment they live in. Ice and snow on the surface of lakes insulates the water below, maintaining a temperature of approximately 39 degrees Fahrenheit. This cold water causes a fish's metabolism to slow down. Many fish species eat less and are less active, but others, like the yellow perch, chain pickerel, northern pike, and walleye, remain active all winter long.

Poor Man's Shrimp

Perch, bluegill, or crappie fillets cut into 3/4" strips.

1 quart of boiling water seasoned with Old Bay and salt.

Drop strips into water and cook until they just turn opaque.

Immediately remove and drop into ice water.

Drain and refrigerate for 1 hour. Strips will firm-up.

Use toothpicks or small forks to dip in cocktail sauce.

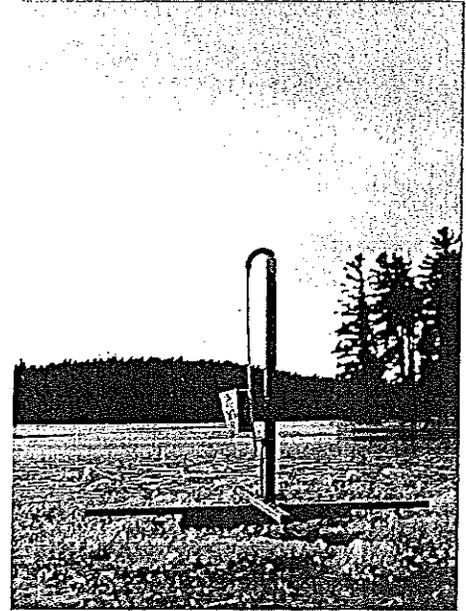
If fish flakes, it was overcooked.



J. WIGGINS, DEEP INLAND FISHERIES



K. BROATCH, DEEP INLAND FISHERIES



K. BROATCH, DEEP INLAND FISHERIES

Ice fishing is the perfect way to enjoy the fresh air and picturesque charm of a New England winter day with friends and the whole family! An ice angler shows off a healthy largemouth bass (top left), and a tip-up with scenic Connecticut in the background (top right).

Finding the Fish

When choosing a place to begin your ice fishing adventure, consider concentrating on underwater structures, such as weed beds, sunken trees, and brush piles. Structures provide food and shelter to small fish, which inevitably attracts larger predatory fish. Sharp transition zones from shallow to deep water are good places to set tip-ups. Predators will lurk around these depth changes, searching for a meal. A depth or bathymetric map of the lake (many are available on the DEEP website at www.ct.gov/deep) will provide bottom contour information. You may notice more activity at a specific depth, indicating that it is time to move the rest of your tip-ups to that depth. A good strategy for jigging is to move around, drilling lots of holes so you can intercept schools of fish that are on the move.

One trip out onto the ice will have you hooked! Ice fishing is the perfect way to enjoy the fresh air and picturesque charm of a New England winter day with friends and family! So, pick up some of the basic gear and add adventure to your winter by incorporating ice fishing into your outdoor sport repertoire!

Additional Information

The Inland Fisheries Division's Connecticut Aquatic Resources Education (CARE) program conducts FREE family ice fishing classes around the state. These classes are designed to introduce the beginner to ice fishing. You can also join CARE volunteers on Coventry Lake from 9:00 AM-12:00 PM on January 25, 2014, for the CARE Family Ice Fishing Derby, or spend the day with us at Burr Pond State Park on February 1, 2014, from 10:00 AM-3:00 PM for the annual No Child Left Inside® Winter Festival! Find a list of upcoming CARE classes and view our "Learn to Ice Fish" video at www.ct.gov/deep/care.



J. MURTAGH, DEEP INLAND FISHERIES

A young ice angler shows off a colorful yellow perch.

Saltmarsh Restoration and Wintering American Black Ducks

Written by Min Huang, DEEP Wildlife Division

Two of the three major goals of the North American Waterfowl Management Plan (NAWMP) are: 1) to provide abundant and resilient waterfowl populations to support hunting and other uses without imperiling habitat, and 2) to have wetlands and related habitats sufficient to sustain waterfowl populations at desired levels, while providing places to recreate and ecological services that benefit society. The goals of the NAWMP are envisioned to be accomplished through the protection and enhancement of wetland habitats and their associated upland habitats. Additionally, Connecticut's Comprehensive Wildlife Conservation Strategy specifically identifies a need to determine the distribution, abundance, condition, and limiting factors (threats) for all Greatest Conservation Need (GCN) species and key habitats and to identify and quantify threats to the survival of GCN species. In Connecticut, the American black duck, as it is in 22 other states, is listed as a GCN species.

The only way to increase any wildlife population is through increasing the quantity and/or quality of habitat. The link, however, between improving habitat quality and increasing wildlife populations is less straightforward than the link between increasing the amount of a given habitat and subsequent increases in wildlife populations. To attain the goal of abundant and resilient waterfowl populations, managers assume that habitat restoration increases the capacity of the landscape to support more waterfowl, in this instance, black ducks, through increased vital rates (e.g., survival or productivity). Increasing survival and/or production should in turn, result in a growing population. During the non-breeding period

Specific objectives:

- Quantify the net change in energetic carrying capacity (kcal/acre) of a saltmarsh before and after restoration activities;
- Quantify the net change in black duck density in a saltmarsh before and after restoration activities;
- Quantify the net change in black duck behavior in a saltmarsh before and after restoration activities;
- Quantify changes in black duck movement (distance and frequency) in and out of a saltmarsh before and after restoration activities.

(winter), it is assumed that black ducks are limited by energy supply (how much food is available). Recent research (see the May/June 2010 issue of *Connecticut Wildlife* magazine) conducted in Connecticut, New Jersey, and Delaware suggests that energetic capacity is barely sufficient to support current numbers of black ducks during severe winters and is currently insufficient to attain NAWMP goals. If deficiencies exist, as it seems they do on the wintering grounds, it is assumed by managers that energetic capacity can be increased via habitat restoration.

Conventional wisdom assumes that saltmarsh restoration through increasing tidal flow, increasing open water on the marsh, and removal of invasive vegetation, such as common reed (*Phragmites australis*), will increase the abundance of important black duck food items. These items include killifish, saltmarsh snails,

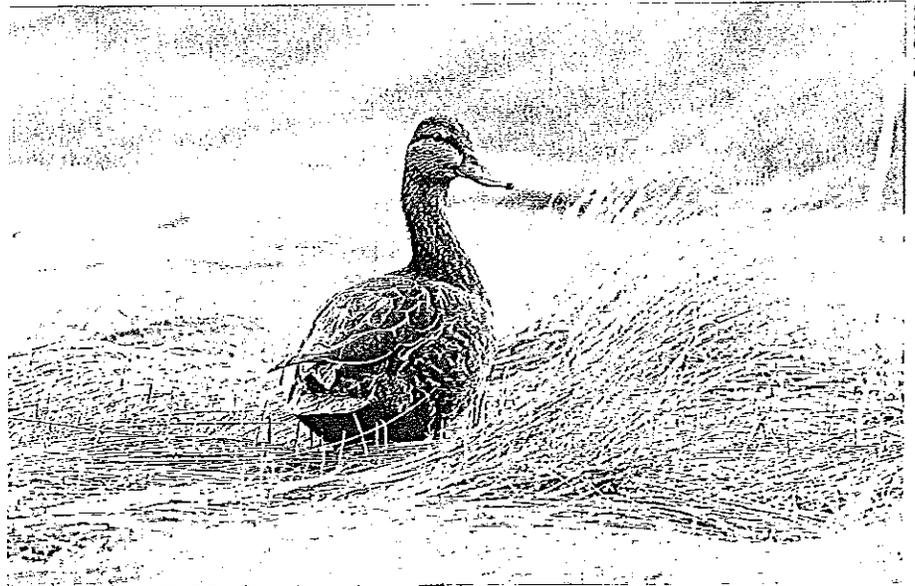


P. J. FUSCO

mud snails, ribbed mussels, grass shrimp, fiddler crabs, gem clams, and seeds from smartweed, widgeon grass, and saltmarsh cordgrass. This presumed increase in food resources (and thus carrying capacity) during winter is predicted to result in an increase in black duck over-winter survival or body condition and subsequent reproduction.

In partnership with the Black Duck Joint Venture, Ducks Unlimited, and the University of Connecticut, the DEEP Wildlife Division recently received a substantial research grant (\$230,000) to test the assumption that saltmarsh restoration results in an increase in food availability for wintering black ducks. Determining to what extent saltmarsh restoration positively impacts energetic resources for wintering waterfowl will ultimately enable managers to optimize the allocation of limited conservation dollars.

Due to a number of circumstances, the Wildlife Division has a great opportunity to assess this important question right now. The Division has already conducted a wintering black duck study for three years to assess survival, available food resources, and energetic demand. Thus, quite a bit is already known about black duck wintering ecology. In addition, a 60-acre wetland restoration project is planned for Silver Sands State Park in Milford. This project has received all of the necessary permits and is ready to be implemented. Implementation of the restoration project was delayed so that biologists could collect two years of baseline data on duck abundance, food availability, and energetic demand at Silver Sands prior to the restoration project. Once the restoration project is completed, biologists will



P. J. FUSCO

Habitat restoration should result in increased fitness for hen black ducks.

assess the project area for two years. At the same time, similar data is being collected at two "control" sites along the coast – Great Harbor Wildlife Management Area in Guilford (one of the study areas in the previous wintering study) and Stewart B. McKinney National Wildlife Refuge.

The Division collected the first year of baseline data in the winter of 2012-2013 and began collecting the second year of baseline data in November 2013. This project should provide critical information that can be used throughout the wintering range to prioritize conservation actions geared towards increasing capacity for wintering waterfowl.

Chronic Wasting Disease Update

Written by Andy LaBonte, DEEP Wildlife Division

Since 2003, Connecticut has been collecting tissue samples from white-tailed deer as part of a plan to determine the presence and distribution of chronic wasting disease (CWD). CWD is a degenerative neurological disease that affects cervids, such as deer, elk, and moose. The DEEP Wildlife Division initiated the study with funding provided by the U. S. Department of Agriculture-Animal and Plant Health Inspection Service.

Both random and targeted surveillance are used to collect tissue samples. Nearly 5,000 deer have been examined through random surveillance (hunter harvest and roadkills) and all have tested negative for CWD. Targeted surveillance has consisted of the collection of 38 deer that had displayed signs and/or symptoms consistent with CWD, such as abnormal behavior, staggering, lowered head and ears, and emaciation. Seven of these deer had some type of infection or swelling of the brain

(i.e., brain worm, brain abscess), five tested positive for rabies, and four had been hit by a car, causing internal injuries but with no external signs of trauma. No specific cause was noted for the remaining 22 deer. None of the deer collected tested positive for CWD. Although funding provided by USDA-APHIS was eliminated from the federal budget in 2012, the Wildlife Division has and will continue to collect suspect deer. Anyone who observes deer displaying symptoms associated with CWD should contact the Division of Law Enforcement (860-434-3333), the Franklin Wildlife office (860-642-7239), or the Sessions Woods office (860-675-8130).

The method of CWD transmission is unknown, however there is strong evidence to suggest that abnormally-shaped proteins called "prions" are responsible. CWD prions are difficult to remove from an infected area because they can remain infective for at least two years. Prions can

be transmitted through indirect contact with various waste products, including blood, tissues, saliva, urine, and feces. New research even suggests that CWD prions may also be taken up by plants and that those contaminated plants represent a previously unrecognized risk of transmission. Even with the ability of prions to exist for an extended period of time and the various mechanisms for infection, CWD has not been demonstrated to have significant impacts on deer population dynamics, as the prevalence rate is extremely low, even in areas where the disease has persisted for more than 45 years. However, because so little is known about prion diseases, such as CWD, Connecticut still prohibits the transport of whole carcasses or parts of any deer or elk from wild or captive herds where CWD has been confirmed. The ban does not apply to deboned meat, cleaned skullcaps, hides, or taxidermy mounts.

Climate Change and the American Lobster:

What Happened to Long Island Sound's Favorite Crustacean?

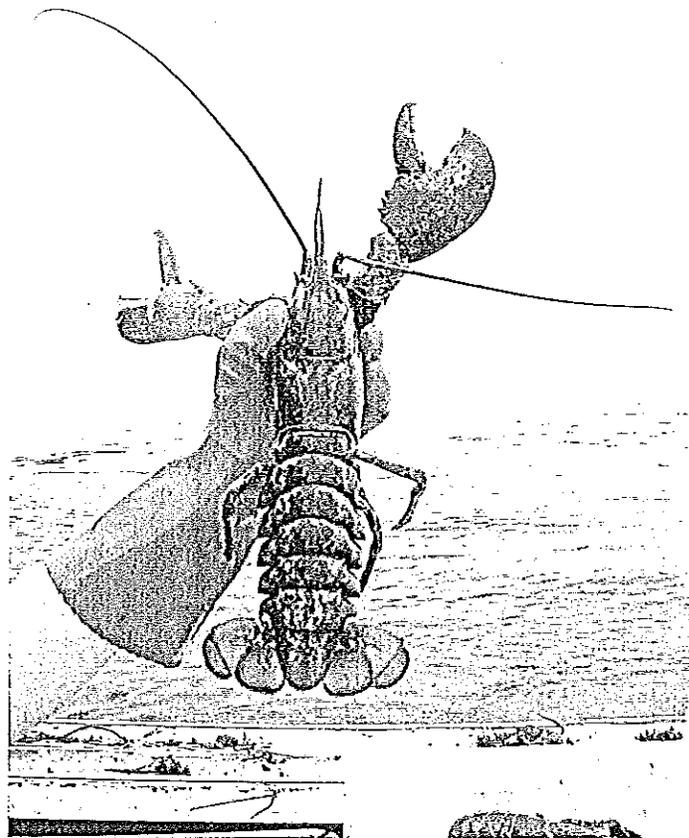
Written by Penny Howell, DEEP Marine Fisheries Division

The American lobster has become a stellar example of what can happen to populations when their physical environment quickly changes. This species was at extraordinarily high abundance through the 1990s over the entire coast from Canada to offshore New Jersey and Delaware, but started to fail in the area south of Cape Cod after 1999. In that year, the population in Long Island Sound experienced a severe die-off, with more than half of all lobsters captured in commercial traps dying before they could be brought to market. Lobster abundance in this southern region has not recovered, while populations to the north are now three times higher than they were in the 1980s. The autumn of 2013 marks a further step in a management plan for the lobster population from Cape Cod to Virginia as Connecticut and New York waters of Long Island Sound were closed to lobster harvest from September through November in a last ditch effort to stop the steep decline in abundance seen in southern waters.

Lobster abundance trends are well monitored through research surveys carried out by the DEEP Marine Fisheries Division in Connecticut and New York waters of Long Island Sound, as well as by sister agencies in adjacent state waters and the National Marine Fisheries Service (NOAA/NMFS) in offshore federal waters. Detailed commercial landings data are also available, including biological information collected by state and federal biologists at sea from the commercial catch.

In 2009, all of these data were used in a population model to "grow up" the population and follow the stock through its reproductive lifespan while applying harvest mortality to match the landings trend. The model was originally designed to run with a fixed and low value of 'non-fishing' or natural mortality to accommodate the American lobster's long life span, estimated at about 20 years. However, when the model was run with the traditional low value of 15% annual natural mortality, the resulting model estimates of abundance looked fairly steady and did not match the declining abundance that the real population had experienced.

Beginning with evidence from the Long Island Sound 1999 die-off and combined with research funded to get at the cause of the die-off, reasons why lobsters are thriving north of Cape Cod but failing to the south are now becoming clear. Several field and laboratory studies identified the lobster's physiological stress threshold at about 20°C (69°F). Data from the DEEP Water Quality Survey were bolstered by continuous-read temperature profiles recorded in lobster traps with the help of cooperating Connecticut commercial lobstermen who monitored the temperature equipment throughout their harvest season. UConn researchers then generated 'temperature maps' through analysis of all the available bottom water temperature data, mapping the area and duration of bottom water above 20.5°C for the entire Sound each year from 1988 to 2007. The summation of area above the lobster's stress threshold for all days each year became a stress index for lobster in the Sound. The median value of this index was 69% higher for years 1998-2007 compared to 1988-1997. When the population model was rerun with various higher rates of non-fishing mortality in years after 1997, model results best matched the abundance trend and size ranges



observed in the southern fishery when non-fishing mortality was nearly doubled (28% instead of 15%).

Results of the revised population model using the higher rate of non-fishing mortality predict future stock abundance throughout the southern region will remain at historically low levels despite greatly reduced harvest rates. Meanwhile, lobster populations north of Cape Cod into Canadian waters are flourishing. Abundance indices for very young lobsters in these northern waters indicate that current high abundance will continue for many years. So market supply will remain high and wholesale prices low, an additional economic blow to the southern fishery.

These results give multiple lines of evidence that rapidly rising water temperature is the principal cause of continued low abundance of lobster in Long Island Sound. These higher temperatures are facilitating chronic diseases which inhibit growth, immune processes, and reproduction. Areas with additional water quality problems will see more severe declines in abundance. However, ongoing analyses of the temperature data by DEEP staff and UConn collaborators hopefully will identify habitat refuges within Long Island Sound and/or in adjacent waters where this highly adaptable crustacean can survive and adapt to its warmer world.

Monitoring Wild Turkey Populations in Connecticut

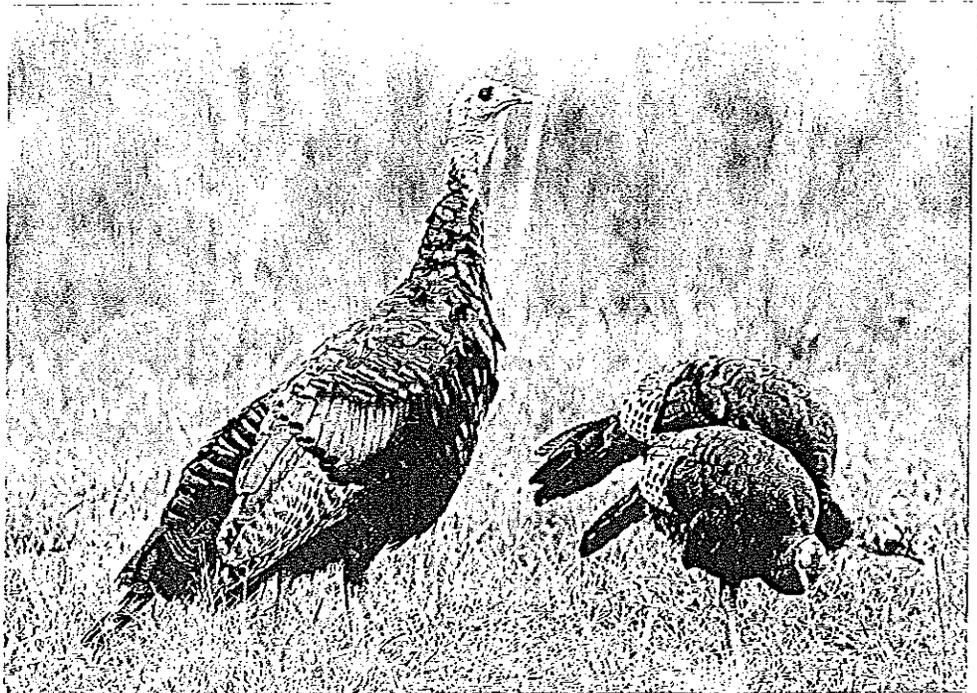
Written by Mike Gregonis, DEEP Wildlife Division

As with any wildlife population, wild turkey populations have years of good and bad productivity. Changes in Connecticut's wild turkey population are monitored through several annual surveys, including a brood survey and hunter survey.

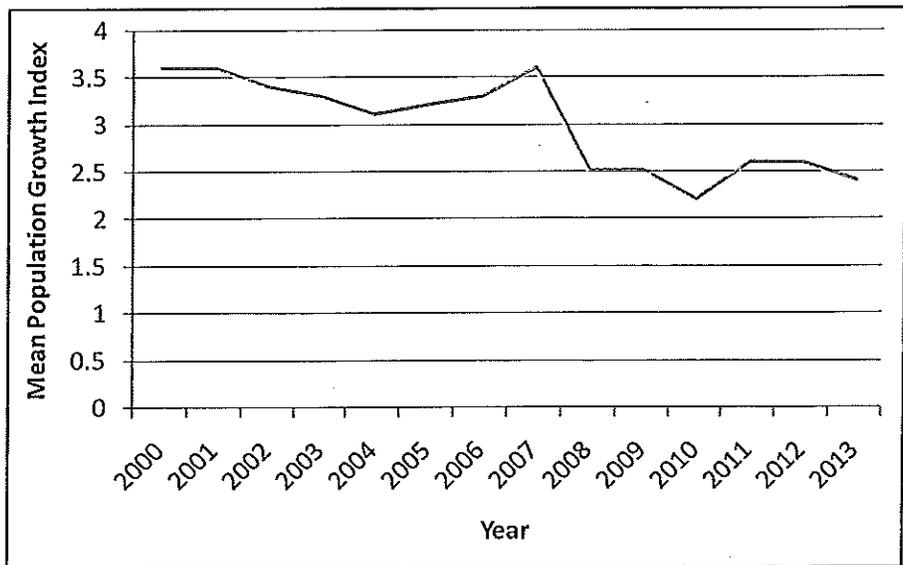
Brood surveys are conducted by DEEP staff and volunteers during June, July, and August. All participants are instructed to report wild turkey sightings, categorized by total hens, total poults, total number of hens with poults, and geographic location of the sighting. These observations are analyzed to obtain an annual productivity index and to evaluate recruitment into the fall population.

In total, the Wildlife Division received 200 wild turkey observations from 57 cooperators in 2013. These turkey observers reported sightings of 1,180 individual turkeys comprised of 337 hens and 843 poults. The mean statewide brood index (total number of poults/total number of hens) was 2.5 poults per hen. June 2013 was the wettest June on record. It has been documented that in years with a cold and wet spring, turkey productivity decreases because these conditions lead to higher mortality of poults and hens. Researchers suggest that a productive wild turkey population should have a brood index of 3.0 or greater. Connecticut has fallen short of this mark in all years except one since the survey began. This suggests that Connecticut's wild turkey population has been on a decline.

All spring turkey hunters who provide the Wildlife Division with an email address receive a hunter survey. The survey is primarily designed to determine the recreational and economic



P. J. FUSCO



Wild turkey brood survey data for Connecticut, 2007-2013.

Year	Total Adults	Total Young	Total Adults & Young	Adults w/out Young	Young per Adult	Number of Reports
2007	731	1,900	2,631	270	2.6	405
2008	448	988	1,436	330	2.2	224
2009	611	1,049	1,660	177	1.7	323
2010	472	1,686	2,158	105	3.6	278
2011	685	1,919	2,604	118	2.8	375
2012	435	1,089	1,524	293	2.5	244
2013	337	843	1,180	115	2.5	200
Total	3,719	9,474	13,193	1,408	2.5	2,049

benefits of spring turkey hunting. It also includes a question that generates a relative index of statewide turkey population growth. Hunters are asked to rank the turkey population in the area they did the majority of their hunting as increasing, stable, or decreasing. These rankings are assigned a numeric value from 0 for decreasing to 6 for increasing.

In 2013, 42% of spring turkey hunters responding to the survey believed the turkey population was stable, 41%

continued on page 21

Connecting Sustainable Forestry and Renewable Energy

Article and photography by Doug Emmerthal, DEEP Division of Forestry

In 2012, The Hotchkiss School in Lakeville, Connecticut, brought renewable energy, education, wildlife habitat, sustainable forest management, and economics all together under one roof when it installed a biomass boiler to provide most of the heating needs for the school's 85 buildings that cover some 1.2 million square feet. Both the structure and biomass boiler were specifically designed and installed to meet the school's goal of being carbon neutral by 2020.

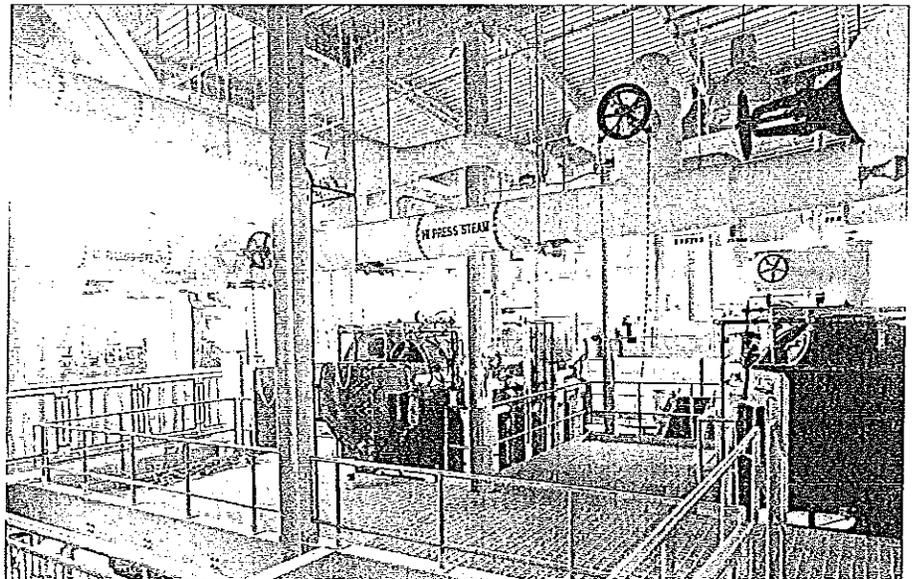
The heating facility uses only locally sourced "bole" wood chips harvested from sustainably managed forests. Harvests from sustainably managed forests support a variety of goals, such as removing invasive species or diseased and defective trees, hazard tree mitigation, regenerating a forest, and creating or enhancing wildlife habitat. Bole chips are made when only the trunks and very large branches are chipped. The roots and smaller branches, where more than 75% of the nutrients reside, are not removed but are left in the forest to slowly decompose and recycle. Woodchips to supply this and similar thermal biomass facilities throughout the Northeast are often obtained through better utilization of wood from trees that are already being harvested for the production of lumber and veneer. Some biomass boilers also use waste residue from sawmill operations.

The school uses the biomass facility as a teaching tool. A complete science curriculum designed from "forest to ash" challenges students to learn about their energy requirements and how these requirements interact with the students' environment. Education was a key consid-

eration in the design. A mezzanine winds throughout the facility, providing complete access to key components for educational purposes. Signs posted along the mezzanine explain how the biomass system works and what particular design components of the construction made the facility worthy of LEEDS recognition and the winner of the 2013 Alexion



The upper bole wood held by the arm of the forwarder is too small to be sawtimber but is perfect for biomass chipping. The wood was being harvested as part of a sustainable forestry practice to improve wildlife habitat.



Educational pictures and posters line the mezzanine behind the two Messersmith biomass boilers at The Hotchkiss School in Lakeville. The laminated wood beams above the boilers are made from Forest Stewardship Council certified forests.

Hotchkiss School's Biomass Facility Wins Top Awards

The Hotchkiss School's biomass facility was recently given the Alexion Award of Excellence by the Connecticut Green Building Council. This is the highest honor given for "Green Architecture" in each state. The facility also won an Honor Award from The American Institute of Architects (AIA) New England and AIA Connecticut, the highest honors they bestow.

The biomass heating facility is one of three LEED-certified plants in the country. According to the school, it will save almost \$900,000 in the current fiscal year because of the switch from fuel oil to sustainably harvested woodchips.

Award of Excellence, the Connecticut Green Building Council's highest award.

The economic lesson is impressive. By installing the biomass system, The Hotchkiss School estimates it has reduced its carbon footprint by 35-45%, while reducing annual heating costs by 62%. The savings amounted to nearly \$900,000 last year alone.

A sawmill based in eastern New York and Supreme Forest Products, which owns and operates Hinman Lumber in Burlington, Connecticut, currently hold the contracts to supply the 5,400 tons of

wood chips required annually. Hinman Lumber is recognized under the Connecticut Grown Forest Products Program operated by DEEP under the authority of the Connecticut Department of Agriculture. Connecticut Grown Forest Products recognizes that the wood from this sawmill is locally grown and sustainably harvested.

The 16,500 square-foot building at The Hotchkiss School houses two Messersmith biomass boilers, a high tech air cleaning system, and a storage bin capable of supplying a week's worth of woodchips, even during the coldest winter

weather. The large curved beams supporting the roof are made from laminated wood harvested from sustainable forests certified by the Forest Stewardship Council (FSC; <https://us.fsc.org>). FSC is one of several independent, non-governmental, not-for-profit organizations that have established rigid standards for certifying forests as being sustainably managed. The laminated wood beams support the roof at

less cost than steel trusses. Even the serpentine-shaped roof is green. Planted with sedum, a hardy drought tolerant perennial, the roof captures more than half of the storm water that falls on it, releasing it slowly and thereby protecting nearby wetlands from erosion and pollution.

For more information about large woody biomass heating systems such as the one at The Hotchkiss School, visit the

U.S. Forest Service Wood Education and Resource Center at www.na.fs.fed.us/werc or the Biomass Energy Resource Center at www.biomasscenter.org. To learn more about sustainable forest management, visit the DEEP Division of Forestry's webpage at www.ct.gov/deep/forestry.

The Plastic Pollution Problem -- You Can Help!

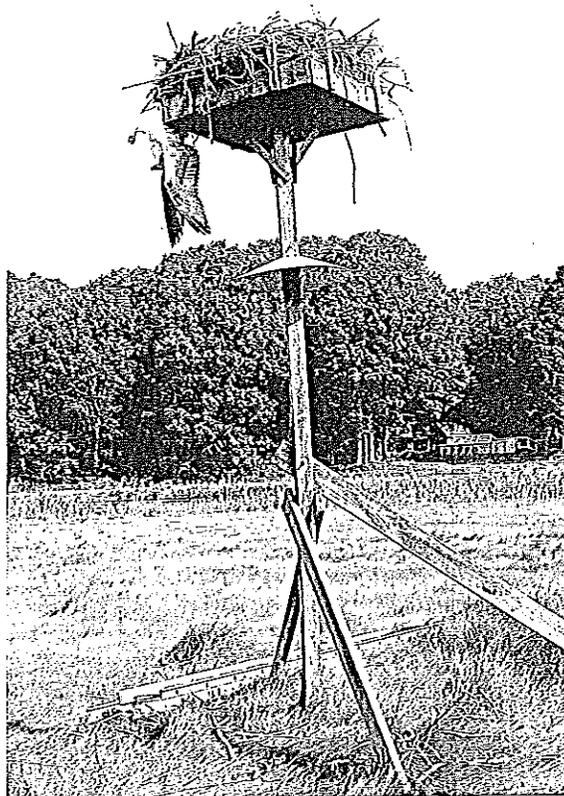
The "Plastic Pollution Problem" is a common topic of articles in *Connecticut Wildlife* magazine because this serious problem not only affects people and our environment, it also has serious consequences for wildlife. Although this is a worldwide problem, we are constantly reminded of the dangers to wildlife here in our own state through reports and photos provided by biologists, the public, volunteers, birders, photographers, and others. Several years back, we published a photo taken by long-time volunteer and avid birder Hank Golet that showed a dead osprey tangled in fishing line and hanging from its nest on a dismal day. That image has been used by the DEEP and many of our cooperators on signs, in publications, and on websites to spread the message about the proper disposal of fishing line. Unfortunately, this past summer, Hank once again found himself documenting the tragic death of a young osprey due to fishing line.

This situation is preventable and should never happen. It is up to all of us to do our part, no matter how big or small, to reduce our contribution to the "plastic problem." Plastic is everywhere. It is a part of so many items that are used every day. The list is incredibly long but includes, not only fishing line, but shopping bags, straws, drink bottles, lids, containers, food bags, six-pack rings, and so much more. The convenience of such products comes with a cost, especially to wildlife when people are careless about how they discard these items.

We've all heard the horror stories and seen photos of what can happen when wildlife comes into contact with our plastic garbage – marine fish and wildlife that die after eating plastic debris that resemble their food; birds tangled in fishing line, kite string, or balloon ribbon; skunks with their heads stuck in yogurt

containers; and freshwater turtles with shells constricted by six-pack rings. Knowing that these tragic situations happen on a daily basis should motivate each and every one of us to take the necessary steps to reduce our contribution to the "Plastic Pollution Problem." Many of us recycle our plastic waste (which is an important and good first step) – but we need to go one step further by reducing the amount of plastics we buy and reusing the items we do buy. We offer some tips to help you reduce and reuse plastic, and also help wildlife in the process. Make an even greater impact by spreading the word and showing by example.

- Use fishing line recycling containers.
- Avoid disposable products, such as plastic bags, straws, plastic utensils, razors, pens, lighters, batteries, etc. There is a multitude of reusable products available today.
- Choose products that are in glass or metal containers or in larger containers, and have little or no extra packaging.
- Bring your own cup or thermos when purchasing beverages away from home. Bring your own containers for restaurant leftovers and take-out.
- Use refillable drink bottles.
- Bring your own containers, bags, and cloth produce bags to stores and refill or reuse them.
- Purchase items in containers that can be refilled.
- Reuse plastic containers.
- Pack a "green" lunch with reusable containers instead of plastic bags.
- Complete the loop by buying products made with recycled materials, such as recycled paper and glass.



This past summer, a juvenile osprey was found dead, tangled in fishing line and hanging from its nest platform in Old Lyme. Ospreys are notorious for "decorating" their nests with pieces of plastic and other debris, such as fishing line, plastic bags, deflated balloons, kite string, and ribbon. These items can be deadly to the young and adults. The proper disposal of fishing line in a recycling container located at popular fishing areas throughout the state could have prevented this tragic death.

PHOTO COURTESY OF HANK GOLET, FR CT DEEP-WILDLIFE

Connecticut's Bright Songster - The Song Sparrow

Article and photography by Paul Fusco, DEEP Wildlife Division

Frequently seen singing from a conspicuous perch atop a brushy tangle, the song sparrow (*Melospiza melodia*) is one of our most familiar birds. It is common and widespread across most of the United States. The species ranges from the Aleutian Islands of Alaska to Mexico in the west and across Canada to Newfoundland and south to the Carolinas on the east coast. As a breeder, the song sparrow is absent from the southern Great Plains.

Within their range, song sparrows are encountered almost everywhere there are open brushy habitats with thickets or overgrown areas, including farm hedge-rows, wetland and forest edges, parks, roadsides, backyards, and any other areas with shrubby habitat. They show a preference for sunny and moist locations.

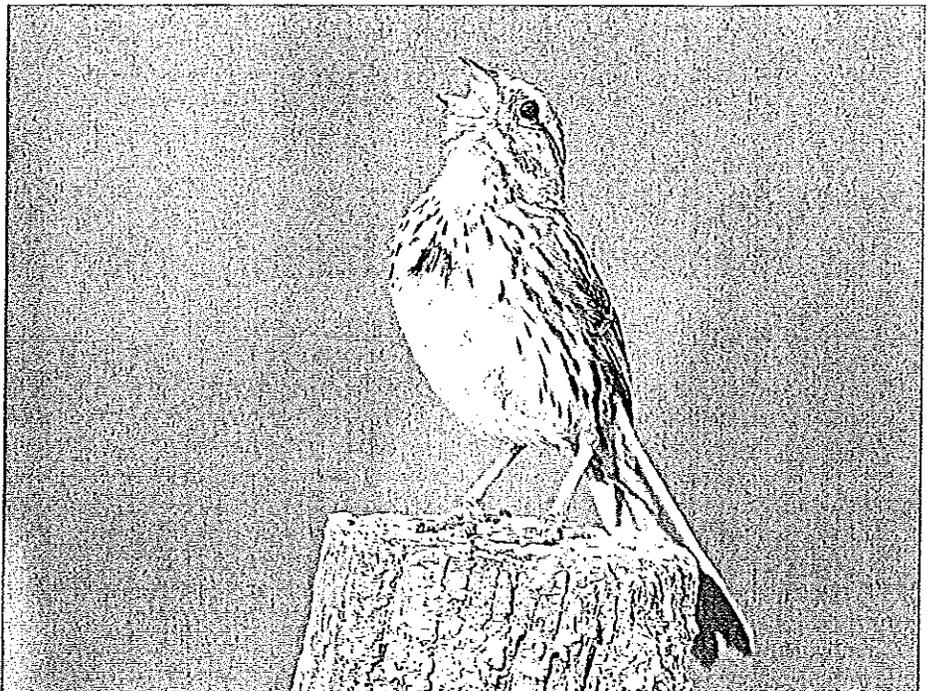
In Connecticut, song sparrows can be found throughout the state at any time of the year as breeders, migrants, and/or overwintering birds. In winter, the birds tend to move toward the coast and, if food supplies are scarce, many will migrate farther south and west. In spring, song sparrows are one of the first to arrive on breeding territories, where males can be heard singing as early as late February and early March.

Description

At 5 to 6.5 inches in length, the song sparrow is a medium-sized and bulky sparrow with a longish, slightly rounded tail. When undertaking short flights, the bird characteristically pumps its tail downward.

Song sparrows have a white underside with a heavily streaked breast and flanks. The breast streaking typically converges into a central spot. The dark topside plumage is marked with a beautiful combination of reddish and chocolate brown mixed with gray. The crown is striped with brown and gray, and the throat is marked with broad dark lateral stripes. Juveniles are finely streaked and lack a central breast spot. The legs and feet are pink, while the bill can be pinkish to gray.

Across the United States, there are regional differences in size and plumage. Plumage varies from rusty to gray and from dark to light. The darkest forms are found in the Pacific Northwest and the paler forms in the dryer western regions. The *maxima* subspecies of the Aleutian



Performed with persistence, the melodious song of the song sparrow is a bright and lively addition to any backyard.

Islands is the largest form.

Behavior

This bird's song is a bright, lively, and variable series of short musical notes usually ending with a trill. The introductory notes have been likened to the beginning of Beethoven's Fifth Symphony, making it distinctive and unmistakable.

The variable nature and complexity of the song have been shown to be extensive. The number of notes per song, the pitch, and the length of song may all vary. An individual sparrow uses a series of differing phrases, notes, and trills that are combined to generate many different song arrangements or patterns. The number of different songs per individual may vary from 6 to as many as 24.

Some song phrases are learned from other nearby sparrows. So, the birds in a local population will sing songs that are more similar to each other than to the songs of other sparrows that are farther away.

Interestingly, singing song sparrows can be heard at most times of the year. Males will often tee up on a favored perch during fall or on sunny, cold winter mornings. They will sometimes even sing at night.

Their call notes sound like a "chump" or "tchenk." They also use a "Ssst" recog-

nition call. These call notes are especially useful for birders conducting surveys, such as the annual National Audubon Society Christmas Bird Count. Because the sparrow may be immersed in thick cover on many occasions, the call notes give away the bird's presence more often than the bird is seen.

Nesting

Females build a simple cup nest made of loosely woven weeds, grasses, and bark, with finer grasses, rootlets, and hair lining the inside. Early season nests are usually built on the ground, under a thick shrub, while later nests are normally situated within thick shrub cover about 2 to 4 feet off the ground.

Females lay 3 to 6 pale greenish eggs, heavily speckled and blotched with reddish brown. Incubation is done by the female, with chicks hatching after 12 to 14 days. Young fledge after about 10 to 12 days. Raising 2 or 3 broods per year is normal for song sparrows, with 6 or 7 broods possible.

Conservation

Often living in close proximity to people, song sparrows are quick to adapt to changing habitat conditions, provided

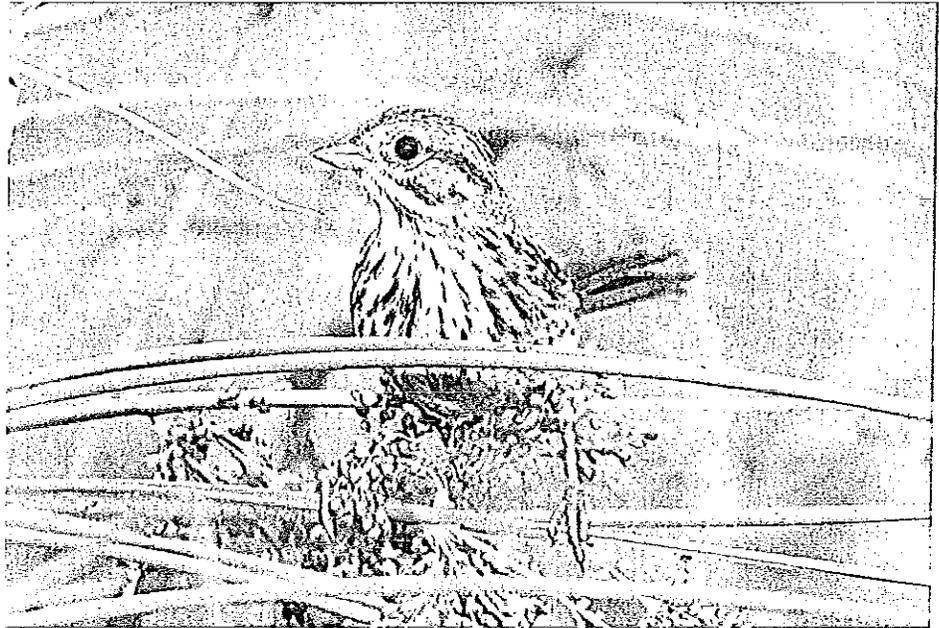


Often found in close proximity to people, the song sparrow is one of our best known and most widely distributed songbirds.

their requirements of open habitat with thick brushy cover are met. Historically, populations benefitted from human landscape transformations, including the clearing of eastern forests for agriculture. Suburbanization and similar development have also benefitted song sparrows to a lesser extent.

The link between healthy song sparrow populations and farmland habitat is significant. In recent years, as farmland habitat has been lost to development on a large scale, song sparrows have been declining. The decline is especially apparent in the Northeast region.

According to data from the National Audubon Society and the U.S. Geological Survey, song sparrow populations in Connecticut have declined by approximately 52% over the last 40 years. Although the song sparrow is considered to be one of our most common songbird species, the population status of this bright songster is trending downward.



Juvenile song sparrows are more buffy and finely streaked than adults. They also lack the central breast spot. Juveniles will molt into their first winter plumage by mid-fall.

CT State Parks – Changing the Course of Park History

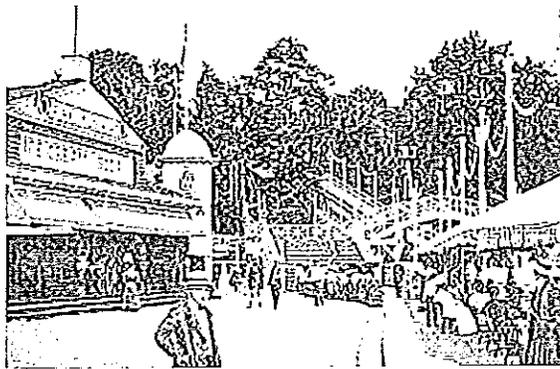
Written by Alan Levere, DEEP State Parks Division

By the end of the First World War in November 1918, the five-year-old Connecticut State Park system could boast 15 properties. The Park Commissioners had been busy with acquisitions in their initial 60 months and the 15 parks totaled 2,963 acres of mountain tops and hilltops (8), Connecticut River properties (3), and brook-side lands (3), in addition to their first purchase of landlocked marsh at Sherwood Island in Westport. However, at this five-year mark, there was still no public access to the shore, despite the fact that coastal access, and specifically recreational beachfront along Long Island Sound, had been a priority from the very start. But, by December 1918, it still had not become a reality.

Field Secretary Albert Turner marked this five-year interval with a review. Turner had personally crisscrossed the state in 1914 and prioritized various lakes, hilltops, streams, and shoreline for park acquisition. His recommendations were held in the highest regard by the park commissioners who had hired him as the first state park employee shortly after the commission was formed. Unfortunately, Albert was becoming frustrated. He knew from his statewide reconnaissance that land values were escalating with the times and shoreline real estate was escalating at a rate far beyond any inland property. The collection of parks acquired at that point had been relatively easy acquisitions and gifts. It was time for a shake-up.

Thus, it was at the State Park Commission meeting of December 10, 1918, that Turner's most forceful argument to date changed the course of park history.

At that meeting Turner made it clear that despite budgets, land availability, prevailing politics, and all other roadblocks, the Connecticut coastline was an acquisition priority and should be acted on now, before rising land values pushed



Savin Rock in West Haven drew hundreds of thousands of visitors each summer. A mini-Coney Island, the amusement park had cut off access to the shoreline and was combating immense crowds and associated infrastructure problems.

the shoreline, in its entirety, out of fiscal reach. In language that is subdued in contrast to today's oft brashness, Turner stated: *"I believe ... that the Commission should at this time most earnestly recommend the appropriation of sufficient funds for both the purchase and development of one large shore park, so that the people of the State may realize the concept of a State Park and see if it is good."*

The site proposed includes nearly a mile of clean sandy beach, with good bathing at all stages of the tide, several hundred acres of upland, some salt meadow, and all practically undeveloped.

It is easily accessible by trolley and highway; it is unquestionably the best site in the State for an immediate demonstration of your aims."

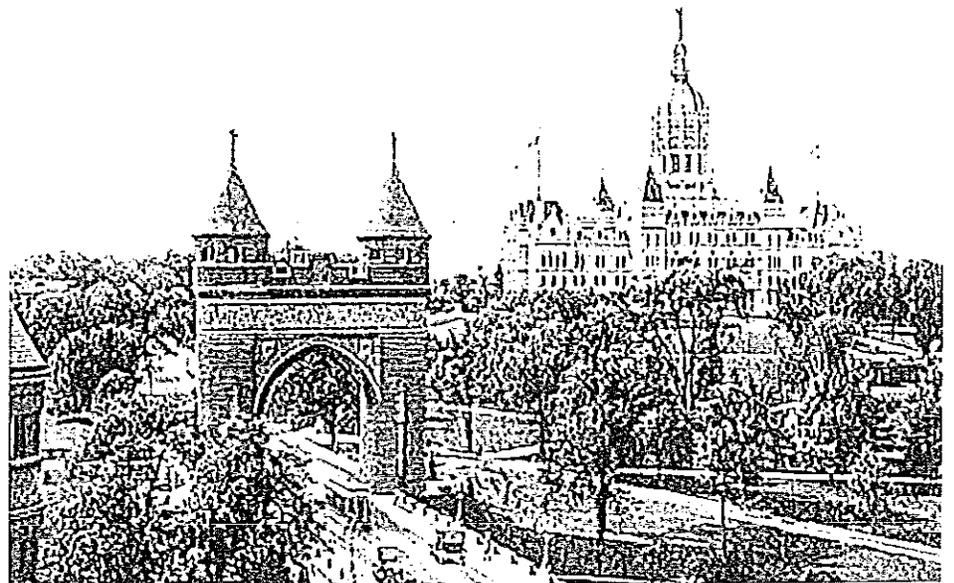
Turner was describing the expanse of beach along the shore in Madison even then known as Hammonasset.

Time for Change

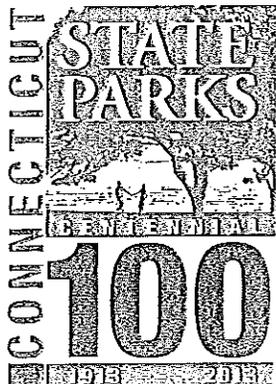
Turner's vision was something on a grand scale, the likes of which Connecticut Parks had not yet seen. His plan encompassed all he knew about popular demand to recreate at the shore, and what it would take to accommodate the thousands of visitors. His point of reference was Savin Rock Amusement Park in

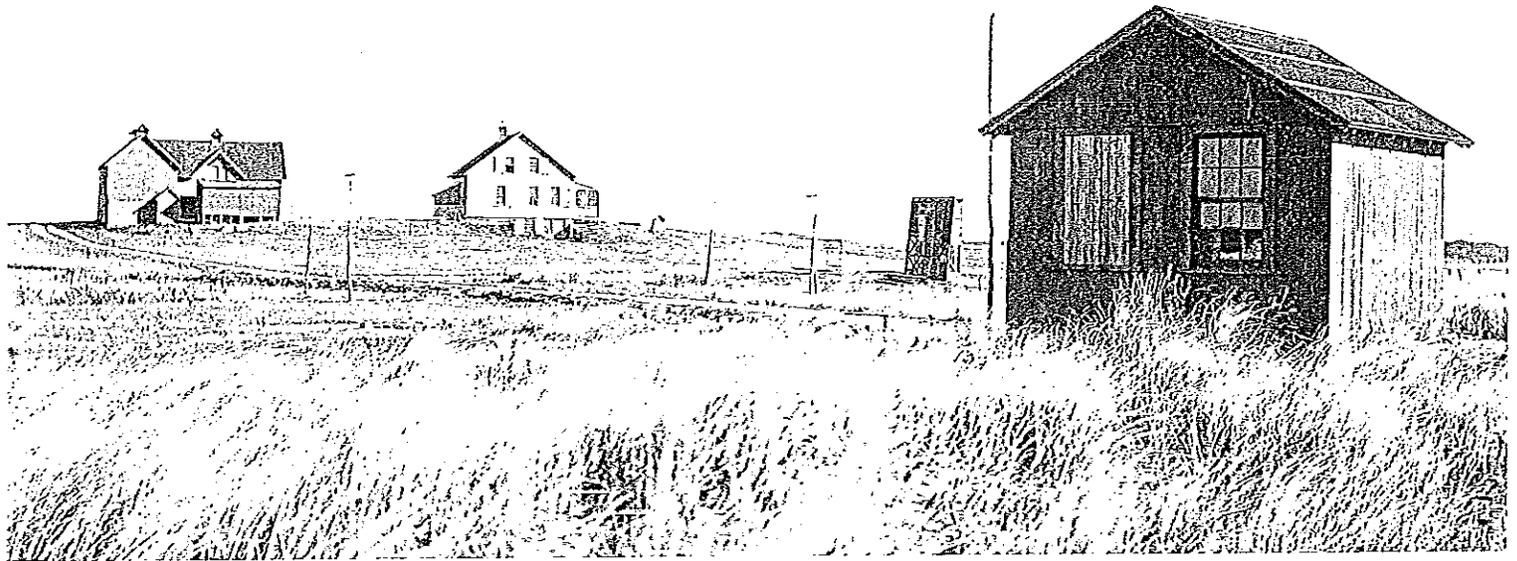
West Haven. Turner spoke with people who remembered Savin Rock as open shore in 1861. He himself had investigated the location as a young man in 1887, taking the horse trolley from New Haven on one Saturday and counting 500 people taking advantage of the merry-go-round and peanut vendors. He shared the thought that Savin Rock in 1913 was so congested with its 1.2 million summer visitors that this congestion could only be eased with the help of the State.

Turner's plan for the park at Hammonasset Beach would need to



This mid-1910s view of Hartford depicts the State Capitol, early motorcars, and a trolley passing under the Memorial Arch. It was via the more than 1,100-mile trolley network that most people travelled around the state.





Before it became a state park, Hammonasset Beach was home to many small farmsteads with their associated outbuildings and access roads. The building in the center of this photograph ultimately became today's Meigs Point Nature Center.

encompass broad open spaces and the infrastructure of a city: water, sewage, electricity, food service, roads, and parking areas for the estimated 25,000 visitors that might come each day. As a civil engineer and experienced planner, Turner could prepare for all those realities. The biggest obstacle would be funding.

Thinking Big

Each of the Park Commissioners had been appointed by the Governor and, as such, were well-connected in their communities and their politics. Their mark of influence, and that of Turner's, can be seen by what happened next.

In the meeting minutes, discussion about Hammonasset for the next six months was quiet. The real work was taking place behind the scenes. During this time, the Park Commissioners were wielding their influence at the State Capitol in Hartford. They were in agreement with Turner, whose logic and insistence they could embrace, but it would take a financial commitment to put Turner's plan into place.

Through 1918, the annual State Park budget from the General Assembly had been \$10,000 a year. But, with a waterfront lot with buildable upland behind it valued at \$6,500 an acre, the Commis-

sion's allocation would have to change significantly if they wanted to assemble several hundred acres of shoreline park. And, it did change. By the end of June 1919, the next biennial disbursement for the Commission was announced and it had increased from \$10,000 per year to a two-year sum of \$315,000. Now, the

internal work of funding appropriation was complete and the external work of building an entirely new type of state park could finally begin.

Follow the Connecticut State Park Centennial on the DEEP website at www.ct.gov/DEEP/Stateparks100.

This Day in Connecticut State Parks History

As part of the Centennial Celebration, the Connecticut State Parks Facebook page (www.facebook.com/CTStateParks) will highlight interesting historical facts about our state parks. Following is just a sampling:

December 2, 1964: The Park and Forest Commission voted unanimously to accept land gifts from three sisters – Mrs. Ruth W. Putnam, Miss Adelaide L. White, and Mrs. Esther W. Nichols – who donated 30 acres adjoining Mt. Bushnell State Park in Washington; and from Anna Hyatt Huntington who gifted approximately 150 acres abutting the existing Collis P. Huntington State Park, which straddles the Bethel/Redding town line.

December 3, 1958: Chairman Garratt expressed that it would be worthwhile to add the 50-acre parcel known as Platt Hill in Winchester to our State Park system, even though a power line would eventually cross the southwest part of the property. He suggested working with the power company to preserve the character of the land. (The transaction was concluded four months later and 109 acres have subsequently been added to Platt Hill State Park, which is known for its scenic views and bird watching.)

December 4, 1964: Connecticut's Highway Commissioner reported at a Park and Forest meeting that road widening would require 25 feet along the entire 1,600-foot frontage at Lamentation Mountain in Berlin, as well as a 20' x 500' strip near the south line of Kent Falls State Park for treatment by the Landscape Bureau. The work at Kent Falls actually benefitted the park.

December 5, 1918: Russell Dart of Middletown donated Dart Island in the Connecticut River to the State Park Commission. The approximately 1.5-acre island became the fifteenth park owned by the Commission, the third along the Connecticut River.

Nesting Shorebirds Continue to Face Challenges

Written by Rebecca Foster, DEEP Wildlife Division; photography by Paul Fusco

The nesting season for piping plovers and least terns has come to a close for 2013 and, overall, productivity in Connecticut was down for both species. The federal and state-threatened piping plover is managed under guidelines issued by the U.S. Fish and Wildlife Service (USFWS) under the Endangered Species Act of 1973. The principle objectives of the Wildlife Division's Piping Plover and Least Tern Project are to limit disturbances at nesting beaches, locate all reproductive pairs and nests, and monitor and collect nesting success data for both species. To accomplish these objectives, the Division is grateful to have numerous partners who assist with plover and tern management, including Audubon Alliance for Coastal Waterbirds (AACW), the USFWS, The Nature Conservancy, landowners, municipalities, DEEP State Parks, and many enthusiastic volunteers, including Master Wildlife Conservationists.



An adult male piping plover keeps a watchful eye over its young. It will not let other plovers near, and will bravely fend off gulls that stray too close.

Plover Numbers Down

This year, Connecticut saw a decline in the number of reproductive pairs of piping plovers nesting along the coastline from the previous two years. In 2013, 45 pairs of plovers nested, fledging 82 chicks. The number of nesting pairs in 2013 is down from 52 pairs in 2012 and 51 pairs in 2011. The nesting pairs documented in 2012 and 2011 were all-time high numbers for Connecticut, so this small decline in nesting pairs is not cause for alarm. The fewer pairs of plovers observed statewide surprised Wildlife Division staff because superstorm Sandy altered many of our coastal beaches and created an overall increase in nesting habitat across the state. It was hoped that the additional nesting habitat would lead to an increase in the number of piping plovers deciding to stay in Connecticut to nest. Regionwide, piping plover census results in 2013 may shed some light on the decrease in pairs, particularly if neighboring states saw unusual increases.

Plover Nest Protection Efforts

Piping plovers arrive at Connecticut beaches in late March or early April and begin establishing nesting territories. Once reproductive pairs are located, Wildlife Division staff and partners erect stake and string fencing and educational signs wherever plovers are present. The reason for this fencing is to prevent people from disturbing the birds while they establish nesting territories, and later, to prevent nests and hatchling chicks from being stepped on unknowingly by beachgoers.

Piping plovers dig a small depression or "scrape" in the sand, often lined with shells, in which to lay their eggs. The eggs, chicks, and incubating birds are well-camouflaged by their sand-colored feathers and patterning. Piping plover nests are located between the high tide wrack line and any dunes or vegetation, which is precisely the same area people use to walk along the beach (see beach diagram). In the absence of protective fencing, beachgoers easily and often

unknowingly walk on plover nests and small, inconspicuous chicks.

Another important tool in piping plover management, in addition to stake and string fencing, is the nest "exclosure." Exclosures are used by the Wildlife Division to protect nests once the adults have laid all four eggs. An exclosure is a circular metal cage anchored in the sand by metal posts, with blueberry netting over the top. The exclosure is quickly erected around a plover nest and buried deeply in the sand. The openings of the cage are large enough for plovers to easily move in and out, but prevent larger mammalian predators such as skunks, raccoons, foxes, and coyotes from reaching the eggs. The netting on top prevents avian predators, such as gulls, crows, and night-herons, from eating the eggs. While this tool has been documented to increase the likelihood of nests successfully hatching, the Wildlife Division judiciously uses exclosures, depending on predator pressure at each site.

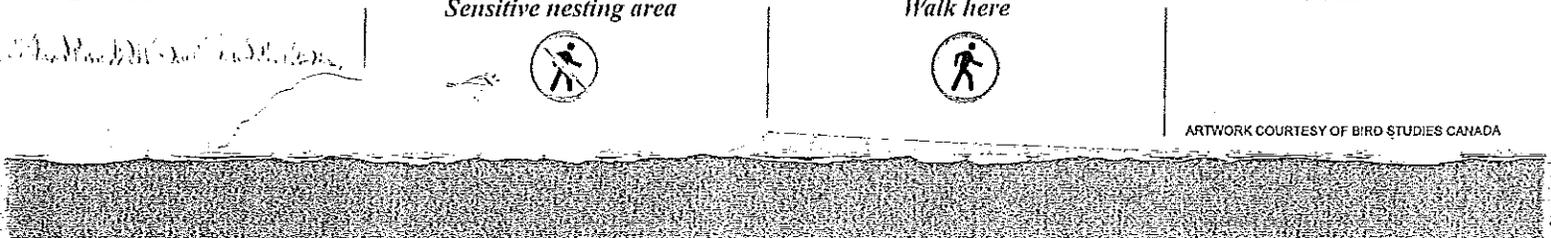
Nesting Beaches Have Safe Zones for Walkers

Dunes

Dry Sand
Sensitive nesting area

Wet Sand
Walk here

Ocean



ARTWORK COURTESY OF BIRD STUDIES CANADA

Limiting Factors

There are a number of factors that limit piping plover productivity each year in Connecticut, including human disturbance, depredation, and environmental challenges like poor weather. Human disturbance is a common problem that occurs at most nesting sites. Visitors, dog-walkers, kite-flying, and other activities that occur at beaches during the nesting season are potentially disturbing to the birds.

Connecticut beaches are recreation destinations that are heavily used during spring and summer. Sunbathing, picnicking, windsurfing, concerts, fireworks, fundraising events, and beach sweeping are all common occurrences. The crowds, litter, and noise resulting from these activities are detrimental to piping plover nesting success. Continued public education by USFWS volunteers, prudence in observing protected birds from a distance, and timely reporting of violations to authorities are measures that can reduce human disturbance related plover losses.

As in most years, piping plover nest abandonments and chick losses due to predators were recorded in 2013. Protective nest enclosures are effective, but not foolproof. Often, mammals will attempt to dig under enclosures and, once chicks hatch and become mobile, they are no longer protected by the cage and become vulnerable. This past season, predator-related abandonments and chick losses were observed in Old Lyme, Stratford, Groton, and West Haven.

The final limiting factor is our environment. Storms, heavy rains, extremes in temperatures, food availability, and high tides all factor into nesting season success. Fortunately, environmental factors had little obvious impact on piping plover nesting or fledgling success in 2013. Only two nests were lost to high tide "wash-outs," a much smaller number lost compared to most years. No major storms occurred during the nesting season and the few heavy rain days did not negatively impact nesting.

The largest numbers of piping plovers were recorded at historically productive beaches in Milford (9 pairs), West Haven (7), Old Lyme (8), and Groton (5). These same beaches also host the state's largest least tern colonies.

More Least Tern Pairs, But Less Young

Least terns nest later than pip-

ing plovers in Connecticut, usually arriving in mid-May to early June. Management of this species is similar to that of plovers -- nesting beaches are fenced and posted with protective signage and reproductive success is monitored. Terns also lay their eggs in a depression in sand, but tern nests cannot be "exclosed." Unlike piping plovers which most often walk the beach, least terns continuously fly to the water to feed on fish and are unable to navigate the small openings of an exclosure.

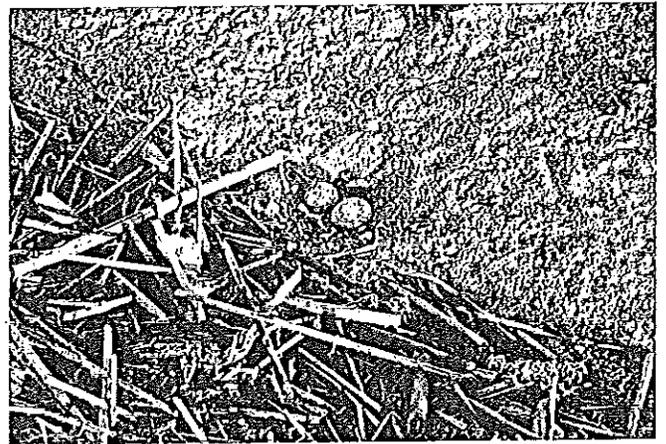
The number of adult terns observed this year was much higher than in previous years. At the height of the least tern nesting season, over 600 pairs were counted statewide. This is a significant increase over the 350 pairs counted in 2012 and 359 pairs in 2011. However, these 600 pairs were only able to fledge 95 young. It is not known why so few young were raised this year, but it is hypothesized that a combination of human disturbance



How vulnerable are these birds?

Young least tern chicks spend their days hunkered on the beach, depending on their sand-colored camouflage to escape danger.

A least tern nest is at the edge of the high tide wrack line. If the water level of the next high tide is slightly higher or if a wind blown wave comes in, this nest will be flooded and will not survive.



At approximately two weeks of age, a piping plover chick is able to move freely up and down the beach in its search for food. It will not be able to fly until it is four to five weeks old.



Least terns are colonial nesters. Their colonies in Connecticut can hold hundreds of pairs of birds.

and environmental factors contributed to this low number.

Limiting Factors

Wildlife Division staff, AAFCW field personnel, and volunteers all observed behaviors that indicate there may have been a shortage of forage fish during a critical time in the least tern nesting cycle. Adults were observed making significantly fewer flights to the water to find fish for their young and competition among chicks within colonies was intense and aggressive when adults did return with food. Two seine studies conducted by DEEP's Marine Fisheries Division indicated lower numbers of some small forage fish species this year. Less available food was not the only challenge faced by least terns. A full moon high tide in July inundated many lower elevation sand spits used for nesting and washed out a number of nests and

young chicks. Losses around this time were recorded at least tern nesting sites in Milford, Westbrook, and Old Lyme.

Human disturbance of tern colonies is documented by staff and volunteers every nesting season. Too many people walking on narrow sand spits, even those who are curious or well-meaning, can cause disturbance. When a threat, such as people

walking too close to a nesting area, is perceived, terns will fly up in the air "en masse," essentially leaving all of the colony's nests exposed. It may take several minutes before the terns land and resume incubation of their nests. If this happens numerous times per day, every day, egg and chick loss due to exposure become more likely. One study found that nesting terns may be more sensitive to human disturbance than other colonial waterbirds because they usually exhibit an "initial mass upflight" response when first disturbed. Researchers recommended a set-back distance of approximately 150 meters (approximately, 500 feet) from breeding terns and any



A least tern chick gets excited when it hears the call from one of its parents bringing in food.

"walking approach" towards a nest. This buffer is extremely difficult to maintain on many of the narrow least tern breeding sites along the Connecticut shoreline.

Dogs Can Be Deadly for Nesting Shorebirds

People who bring their dogs to nesting beaches (even when it is prohibited by town ordinance) create an extremely stressful and disturbing situation for shorebirds. The DEEP Wildlife Division and many town governments put up "NO DOGS" signs at shorebird nesting beaches at the start of the breeding season as a reminder to pet owners to keep pets off the beach during the sensitive nesting season. Even leashed dogs will flush an incubating parent from its nest, exposing the eggs and young to the elements and opportunistic predators, such as crows and gulls. As natural predators, dogs will instinctively chase adult and young plovers, and the birds may be injured or killed. A shocking example of this situation occurred this past summer in Scarborough, Maine, when a young piping plover, still learning to fly, was chased down and killed by an unleashed dog. This unfortunate incident illustrates that domestic dogs are a threat to wildlife. This young bird was protected by federal law and its death is crime. The town was fined \$12,000 for violations of the federal Endangered Species Act. More information can be found at Maine Audubon's website (<https://maineaudubon.org/blog/2013/08/death-of-piping-plover-serves-as-reminder-to-keep-dogs-on-leash/>).

Looking Ahead to 2014

Next nesting season, the Wildlife Division, with assistance from our many conservation partners, plans to continue educating beach visitors, as well as protecting and managing sensitive nesting areas for our threatened shorebird populations. Those interested in becoming USFWS volunteers for the 2014 piping plover/least tern breeding season should contact the Audubon Alliance for Coastal Waterbirds at ctwaterbirds.blogspot.com.

Northern Ring-necked Snake

Diadophis punctatus edwardsii

Background and Range

The small, secretive, and distinctly marked northern ring-necked snake is found in a wide variety of habitats in Connecticut, from near sea level to the state's highest elevations in the northwest corner. This snake is presently widespread and secure in the state; however, it appears to be very common in certain areas while rare in others.

On a larger scale, the northern ring-necked snake is found from Nova Scotia westward to northeastern Wisconsin and south through the Appalachian Mountains to northern Georgia and northeastern Alabama. Westward, the range extends as far as the western portions of Kentucky and Tennessee, eastern and southern Ohio, and the southern sections of Indiana and Illinois.

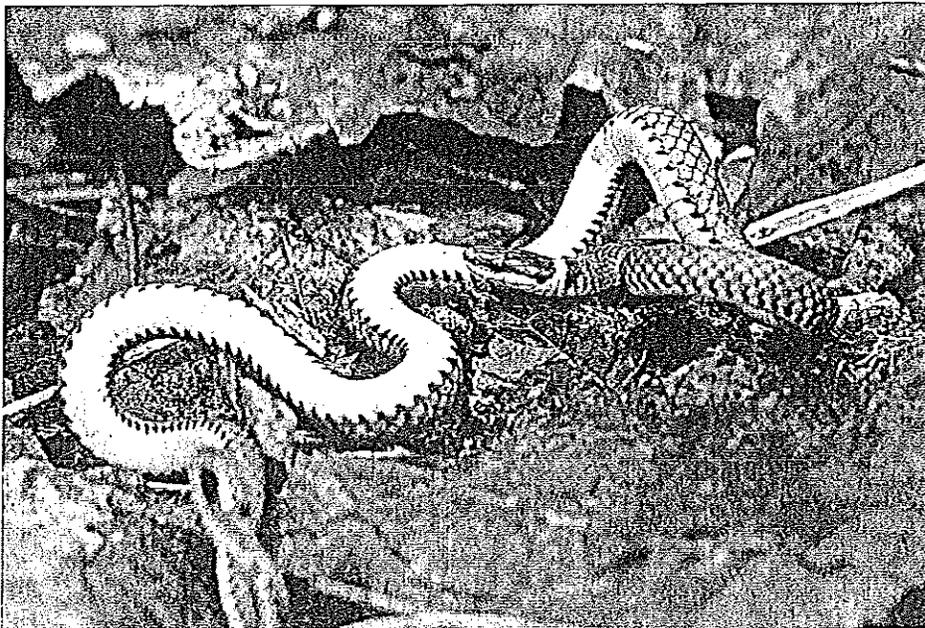
Description

As the name implies, this snake has a ring around the neck that is yellow or yellowish-orange. The body is a dull blue-gray, with a bright yellow belly that may have black spots. The black head is flattened and the scales are smooth and polished. Ring-necked snakes are small and thin, measuring from 9 to 15 inches in length. Juveniles closely resemble adults.

Habitat and Diet

Ring-necked snakes are found in a diversity of habitats, such as gardens, meadows, deciduous forests, rocky areas, old fields, grassy fields, gravel pits, sand barrens, and dumps. These habitats also can range from pristine to disturbed, wet to dry, and open to closed canopy. This snake is most frequently encountered under the cover of rocks, logs, bark, leaf litter, boards, and other debris. Stone walls are often used for cover, especially old walls that have an accumulation of leaves and soil in their crevices and are located in wooded areas. Ring-necked snakes are occasionally found in basements, as well.

Typical food items of the ring-necked snake include small salamanders (like the redback), redbelly snakes, and earthworms.



P. J. FUSCO

Life History

Ring-necked snakes are active from May through mid-October. They are oviparous, meaning that they lay eggs. The 1-6 eggs (average 3.5) are laid in June and early July, often in a community nest. These nests are frequently located in rotted logs and sunny locations.

Interesting Facts

This basically nocturnal snake spends most of the day concealed under cover. When disturbed from its hiding place, it will usually seek cover under the nearest available object.

This small snake is preyed on by other larger snakes, like the black racer, and domestic cats. Roadkills are a frequent source of mortality.

Ring-necked snakes are often confused with young northern brownsnakes, which have a neck ring. However, the two species can be distinguished by their scales – ring-necked snakes have smooth scales while brownsnakes have keeled scales (a raised ridge along the center, giving a rough appearance).

What You Can Do

Take the time to learn about, understand, and respect snakes, and share your knowledge with others. If you encounter a snake, observe it from a distance and allow it to go on its way. All snakes will retreat from humans if given a chance. Even though most snakes are mild-tempered, you should try not to disturb snakes by getting too close or handling them. Never collect any wild snake as a pet. In addition, the killing of snakes is strongly discouraged. If you encounter a snake problem, assistance can be found by calling the DEEP Wildlife Division at 860-675-8130. Learn more about Connecticut snakes on the DEEP website (www.ct.gov/deep/wildlife).

Eastern Wormsnake

Carphophis amoenus

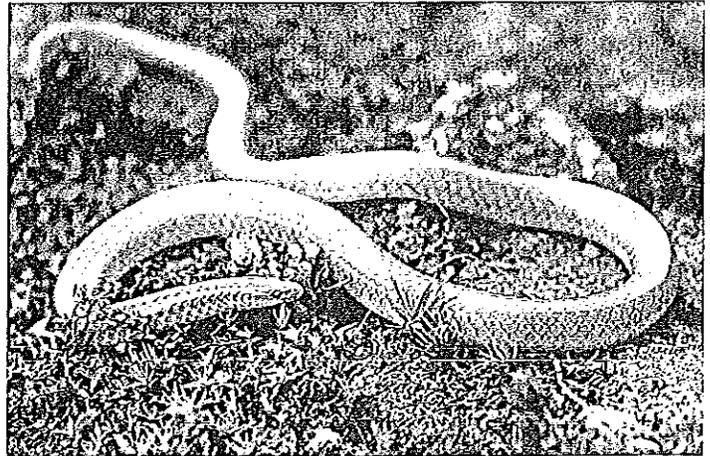
The eastern wormsnake is so named because it resembles an earthworm. This burrowing snake is a southern species, just entering southern New England and adjacent sections of New York. It has been found throughout Connecticut, except for the extreme northwestern corner, and it is most widely distributed in low-lying areas. Suburban development has resulted in the loss of large areas of habitat suitable for this species.

This small (7-14 inches), slender snake has a chocolate brown-gray body with pink belly; small flattened head with tiny eyes; stubby tail with pointed tip; and smooth, polished scales. At hatching, juveniles are patterned similar to adults, but the body is a darker brown and the belly is a brighter pink.

This snake prefers well-drained, sandy soils for burrowing. It is typically found in moist habitats, usually in or near deciduous woodlands and occasionally in gardens. The primary food item is earthworms, but the wormsnake will also feed on soft-bodied insects.

Eastern wormsnakes are active from May through September. They mate both in spring and autumn. Small, thin-shelled eggs (2-8) are laid in June or July, usually under rocks or in decaying logs. They hatch between early August and mid-September. Hatchlings are 3-4 inches in length and reach maturity after about 3 years. No parental care is involved.

Although extremely secretive and rarely found due to their underground habits, wormsnakes may be more abundant and wide-



P. J. FUSCO

spread than indicated by records. Due to these same habits, there is little detailed information on the activity cycles of wormsnakes in southern New England. These snakes may be active during both the day and night, and they are rarely encountered in the open as they are usually under flat slabs of rock, logs, bark, boards, and other debris. They will spend the winter underground.

This snake has a sharp, pointy tail that aids in burrowing. When handled, it will use its spiny tail as if burrowing and push against the fingers instead of biting. It also can emit an unpleasant odor from anal glands if stressed.

The wormsnake is sometimes confused with the northern redbelly snake.

Northern Red-bellied Snake

Storeria o. occipitomaculata

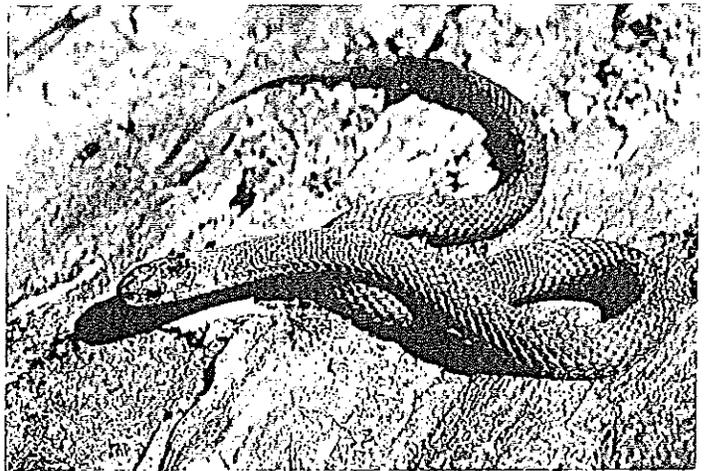
The secretive northern redbelly snake is widely distributed in upland regions of Connecticut. The population is considered secure in the state. Reforestation of southern New England, including Connecticut, during the twentieth century has benefited this woodland species. Forestry practices which create small clearings, with an abundance of logs, bark, and slash, may provide enhanced basking and feeding opportunities in otherwise heavily wooded areas of the state.

This small snake (8-11 inches) has a chestnut brown or slate gray body that is distinctly marked with a bright red or orange belly and three well-defined light-colored spots behind the head. The dorsal (back) scales are keeled (raised ridge in the center of each scale, giving a rough appearance). Juveniles resemble adults, except that the spots around the neck tend to resemble a ring (often causing confusion with the northern ring-necked snake).

Redbelly snakes occupy moist upland habitats, including woodlands, wet meadows, swamp forests, open fields, and marsh or bog borders. Favored food items include insects, slugs, earthworms, and beetle larvae.

These snakes are typically active in May through October. Mating occurs in spring and early summer, and the females give live birth to an average of 7-8 young sometime between late July and early September.

This snake spends most its life hidden under boards, rotting logs, rocks, bark, brush piles, and leaves. It usually stays under cover during the daylight hours, emerging in the evening and



P. J. FUSCO

remaining active throughout the night. Winters are spent in unused rodent burrows.

The northern redbelly snake is sometimes confused with the northern brownsnake, northern ring-necked snake, and eastern wormsnake.

When redbelly snakes are handled, they will not try to bite, but they may emit musk from glands at the base of the tail and some may curl the upper "lip" outward, showing off tiny teeth.

Think Twice Before Getting a Pet Snake

As 2013 Year of the Snake comes to a close, it is important to touch on an important topic – having a snake as a pet. The Wildlife Division and other conservation organizations and agencies have spent the year telling you how important and fascinating snakes are. However, you may want to think twice about acquiring a snake as a pet, even though they are readily available in your local pet store. There are numerous people who have pet snakes, and many are good caregivers. Unfortunately, there is still a large number of people who do not provide adequate care, often resulting in the snake's death or prolonged suffering. Others often release their snakes into the wild once the novelty wears off. For those reasons, we do not encourage people to have snakes as pets, especially if the snake has been collected from the wild (most often illegally). Following are some things to keep in mind before you make a decision to obtain a pet snake:

- Although some pet-trade amphibians and reptiles are bred in captivity, the majority still are poached from wild populations. During transport to pet stores, these animals are typically held and shipped in unsanitary and inhumane conditions. Many die, and most of the survivors arrive in ill health. Furthermore, collecting for the pet trade has drastically reduced many reptile and amphibian populations. The collection of snakes from the wild in Connecticut is strictly regulated.
- Keeping a snake requires just as much commitment and responsibility as keeping any other pet. You must be willing to give the appropriate time and effort to ensure the animal's proper

care. Most importantly, caring for a pet snake is not as easy as you may think. Snakes require specific temperatures, diets, and lighting for digestion and health. Cages must be kept clean as snakes may carry salmonella. And, snakes can live a relatively long time – possibly up to 15-20 years.

- Connecticut's regulations on the "Importation, Possession or Liberation of Wild Birds, Mammals, Reptiles, Amphibians and Invertebrates" specifically lists snakes that are illegal to possess in our state. The possession of venomous snakes, in particular, is prohibited. These regulations should be reviewed before any decisions are made (www.ct.gov/deep).

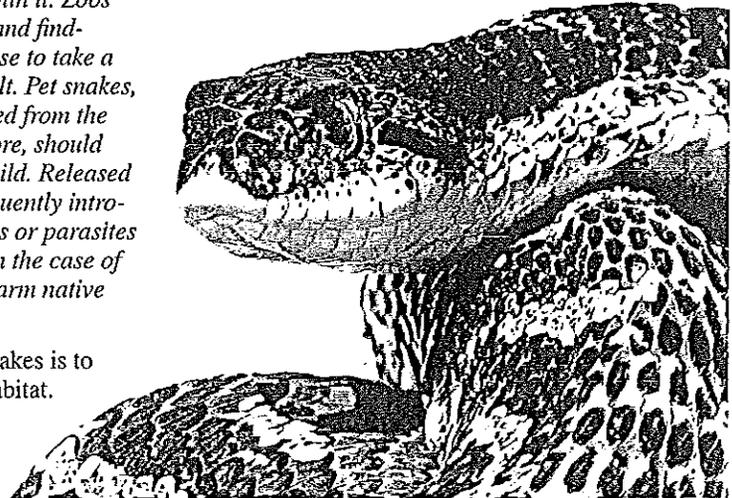
- Once the novelty of having a pet snake wears off, the owner is faced with a decision of what to do with it. Zoos rarely accept pet snakes, and finding a buyer or someone else to take a snake, can often be difficult. Pet snakes, whether they were collected from the wild or bought at a pet store, should never be released to the wild. Released snakes rarely survive, frequently introduce undetectable diseases or parasites to wild populations, and in the case of non-native species, may harm native snake populations.

The best way to enjoy snakes is to watch them in their native habitat. Help keep wild snakes wild and leave them where you find them.



Celebrate Snakes! Learn all about Connecticut's snakes on the DEEP website at www.ct.gov/deep/YearoftheSnake. Also, visit the Partners in Amphibian and Reptile Conservation website at www.yearofthesnake.org.

2014 is the Year of the Salamander! Look for more to come.



P. J. FUSCO

Monitoring Wild Turkeys

continued from page 9

believed it was decreasing, and 17% believed it was increasing. The mean rank of Connecticut's turkey population growth index for 2013 was 2.4, which indicates a slightly decreasing population. Since 2007, this index has indicated a downward trend.

Data in the brood and hunter surveys correlate well. For example, in 2009, the brood index was the lowest recorded since the survey began. The follow-

ing spring, hunters indicated on their surveys that the population declined. Additionally, in 2010, the highest brood index was recorded and, the following spring, hunters indicated an increase in population growth. The positive correlation of the two data sets indicates that the surveys provide a good trend index for the statewide wild turkey population.

The Wildlife Division has been asked that if a wildlife population is in decline how can we continue to hunt that species. Although hunters take individual animals out of the population, season

and bag limits are set in such a way that hunter harvests do not impact the overall population. During the 2012 turkey hunting seasons, a total of 1,450 wild turkeys were harvested statewide. This equates to the harvest of one turkey per three square miles of land in Connecticut. At this level of harvest, Connecticut's statewide turkey population is not being impacted by hunting.

Research also has shown that spring weather is the most important factor that influences fluctuations in the overall population across the wild turkey's range.

FROM THE FIELD

Avoid Using Material from Invasive Plants in Holiday Displays

Connecticut residents are advised to be on the lookout for invasive Oriental bittersweet this holiday season, and avoid using this plant as part of their holiday décor. Oriental bittersweet (*Celastrus orbiculatus*) was formerly used in wreath-making and other holiday decorations. The woody vine produces bright red fruits with yellow outer coverings that may be attractive for craft projects. Unfortunately, use of the vines helps to spread seeds to new areas. Once established in natural settings, the vines can wrap around trees, strangling them. The extra load on tree limbs caused by the plant also can cause the limbs to fail, contributing to damage and power outages. Improper disposal of decorations with Oriental bittersweet, either outdoors or in compost after the holidays, can contribute to the spread of this highly invasive species.

Consider the impact on the environment when decorating for this holiday season and avoid using material from bittersweet or other invasive plants. There are alternatives to using invasives for adding color to holiday decorations, and a number of local florists and greenhouse growers are often able to provide these options.

Decorators and florists should also be aware that selling or moving Oriental bittersweet is prohibited by state law. The plant is listed as invasive in Connecticut due to its fast growth, high seed production, and the environmental damage it causes. The law, which went into effect in 2004, prohibits the moving, selling, purchasing, transplanting, cultivating, or distributing of 80 invasive plant species in Connecticut. This prohibition extends to seeds, flowers, and other reproductive portions of the plants. Fines for violation of the law are listed at \$50 per plant.

Individuals who find invasive bittersweet for sale in Connecticut are asked to contact the Connecticut Invasive Plant Coordinator at 860-208-3900 or email logan.senack@ct.gov. For more information about Oriental bittersweet in Connecticut, visit www.cipwg.uconn.edu.



Oriental bittersweet

Important Reminder: According to Connecticut State Regulations, no person shall destroy or remove any vegetation from state parks and forest recreation areas except as authorized by DEEP.

Help Us Help Connecticut's Bats!

Whether you have seen a bat out during winter; one or more roosting in your bat house, barn, or eaves during summer; or even a dead bat, the Wildlife Division wants to hear about it. Report your observations by using the DEEP's "Public Bat Sightings Form," which is available on the website at www.ct.gov/deep/wildlife. A digital photograph or cell phone photo of the bat(s) is extremely helpful. Photos may be sent with the Bat Sighting Form to the address on the form or emailed to deep.batprogram@ct.gov.

If you find a dead bat(s), please do not discard it. The Wildlife Division may be interested in the carcass. Save the carcass by double bagging it (WEAR GLOVES!) and placing it on ice or in a freezer. Contact the Bat Program at the Wildlife Division's Sessions Woods Office for additional information (860-675-8130; deep.batprogram@ct.gov). NEVER touch a live bat. Bats will bite to protect themselves!

Information gathered through the Public Bat Sighting Forms will help us understand how bats are doing in the wake of white-nose syndrome (WNS), a deadly disease that has killed over 5.7 million bats since it was documented in New York in the winter of 2006-2007. It is named for the white fungus (*Pseudogymnoascus destructans*, formerly *Geomyces destructans*) that is seen on a bat's nose and/or wings while in hibernation. WNS has continued to spread rapidly in the United States and Canada. Learn more about WNS at <http://whitenoosesyndrome.org>.

Thank you for taking the time to help Connecticut's bats!

Crescent Lake Recreation Area Recognized as the State's First Connecticut Grown Community Forest

Connecticut's Departments of Energy and Environmental Protection (DEEP) and Agriculture (DoAg) recently designated Southington's Crescent Lake Recreation Area as the state's first community forest to receive the Connecticut Grown recognition for sustainable forest management.

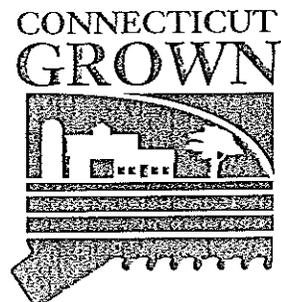
A favorite spot for area residents to enjoy many outdoor activities, the 223-acre Crescent Lake Recreation Area was recognized for taking key steps toward sustainable woodland management. With assistance from the UConn Extension Forestry Program, a sustainable forest management plan was developed and accepted by the Town of Southington, and is now guiding on-the-ground decisions.

Crescent Lake Recreation Area's sustainable forest management plan includes use of sustainable forestry practices, protection of water quality during forestry operations, compliance with Connecticut's Forest Practices Act, adherence to the standards of DoAg's Connecticut Grown Program, and responding to destructive forest pests and invasive plants, all of which helped qualify it for this special distinction.

The Connecticut Grown Program was established in 1986 when the now-familiar green and blue logo was introduced to identify agricultural products grown in the state. Over the past quarter century, the program has grown and diversified as public interest in and demand for local food and farm products has blossomed.

Recognizing this intensifying consumer appreciation for the value of locally grown products, the Connecticut Grown Program has welcomed sustainable forestry operations and products. DEEP and DoAg reached a historic agreement on January 1, 2011, to include products from Connecticut forests that meet sound agricultural practices and other sustainability standards in this popular and successful multifaceted initiative.

For more information about Connecticut Grown, visit the DEEP website at www.ct.gov/deep/forestry or the DoAg website at www.ct.gov/doag.



Conservation Calendar

- Feb. 9.....Seal Search at Hammonasset Beach State Park, starting at 12:00 noon. Explore the shore and look for seals and other wildlife along this beautiful coastal trail. Meet at the Meigs Point Nature Center. For more information, visit the Meigs Point Nature Center website at www.meigspointnaturecenter.org.
- Feb. 20.....Hawk and Owl Program presented by Sharon Audubon at Dinosaur State Park, Rocky Hill. This program starts at 1:00 PM. Space is limited to 100 visitors. Tickets are available on a first-come, first-serve basis with admission after 9:00 AM on the day of the show. Admission is \$6.00 for ages 13 and up, \$2.00 for ages 6-12, and free for 5 and under. Dinosaur State Park is located at 400 West Street in Rocky Hill. More information is available at www.ct.gov/deep/dinosaurstatepark or call 860-529-5816.

Programs at the Sessions Woods Conservation Education Center

Programs are a cooperative venture between the Wildlife Division and the Friends of Sessions Woods. Please pre-register by calling 860-675-8130 (Mon.-Fri., 8:30 AM-4:30 PM). Programs are free unless noted. An adult must accompany children under 12 years old. No pets allowed! Sessions Woods is located at 341 Milford St. (Route 69) in Burlington.

- Jan. 18.....Snowshoe Walk, starting at 1:00 PM. Snowshoe along the trails at Sessions Woods to look for signs of wildlife activity. Natural Resource Educator Laura Rogers-Castro will lead this program and identify the sights and sounds of wildlife on a winter afternoon. This program is snow-dependent and participants must supply their own snowshoes. The walk will be determined based on the snow conditions. Participants should wear appropriate clothing and bring water for this somewhat strenuous excursion. Meet in the lobby of the Conservation Education Center.
- Feb. 8.....Adventures with Furbearers, starting at 1:30 PM. Mindy Domurat, Outreach Assistant for the Wildlife Division, will present this indoor and outdoor program for children ages 3-10. Mindy will begin indoors with background information on animals with fur before heading outdoors for a scavenger hunt. Following the walk, children are invited to create an animal craft. Participants should bring appropriate clothing for outdoor activities.

Shepaug Bald Eagle Observation Area to Open on December 21

The Shepaug Bald Eagle Observation Area, in Southbury, opens for its 29th season beginning on December 21, 2013, running through Wednesday, March 5, 2014. The area is open for observations on Wednesdays, Saturdays, and Sundays between 9:00 AM and 1:00 PM. Although admission is free-of-charge, advance reservations are required and will be taken beginning Tuesday, December 10, 2013. To make reservations for individuals, families, and groups, call toll-free at 800-368-8954 between 9:00 AM and 3:00 PM on Tuesdays through Fridays.

The Shepaug Eagle Observation Area is one of the top eagle viewing locations in New England. It is a popular spot for eagles in winter when turbulence below the dam keeps the water from freezing, and the fish below the dam provide a ready food source. Specialists will be on-site with high-powered telescopes to help visitors see the eagles in action and to answer questions. Visitors are encouraged to dress warmly because the Observation Area is unheated, and to bring binoculars, if possible, given the limited number of on-site telescopes. The Shepaug Eagle Observation Area is run by FirstLight Power Resources, a GDF SUEZ Energy North America company, which owns and operates several hydroelectric facilities along the Housatonic River.



P. J. FUSCO



Find us on
Facebook

[www.facebook.com/
CTFishandWildlife](http://www.facebook.com/CTFishandWildlife)

Connecticut Wildlife



Subscription Order

Please make checks payable to:

Connecticut Wildlife, P.O. Box 1550, Burlington, CT 06013

Check one:

1 Year (\$8.00) 2 Years (\$15.00) 3 Years (\$20.00)

Name: _____

Address: _____

City: _____ State: _____

Zip: _____ Tel.: _____

Email: _____

Will only be used for subscription purposes

Check one:

Renewal
 New Subscription
 Gift Subscription

Gift card to read: _____

Donation to the Wildlife Fund:

\$ _____

Help fund projects that benefit songbirds, threatened and endangered species, reptiles, amphibians, bats, and other wildlife species.

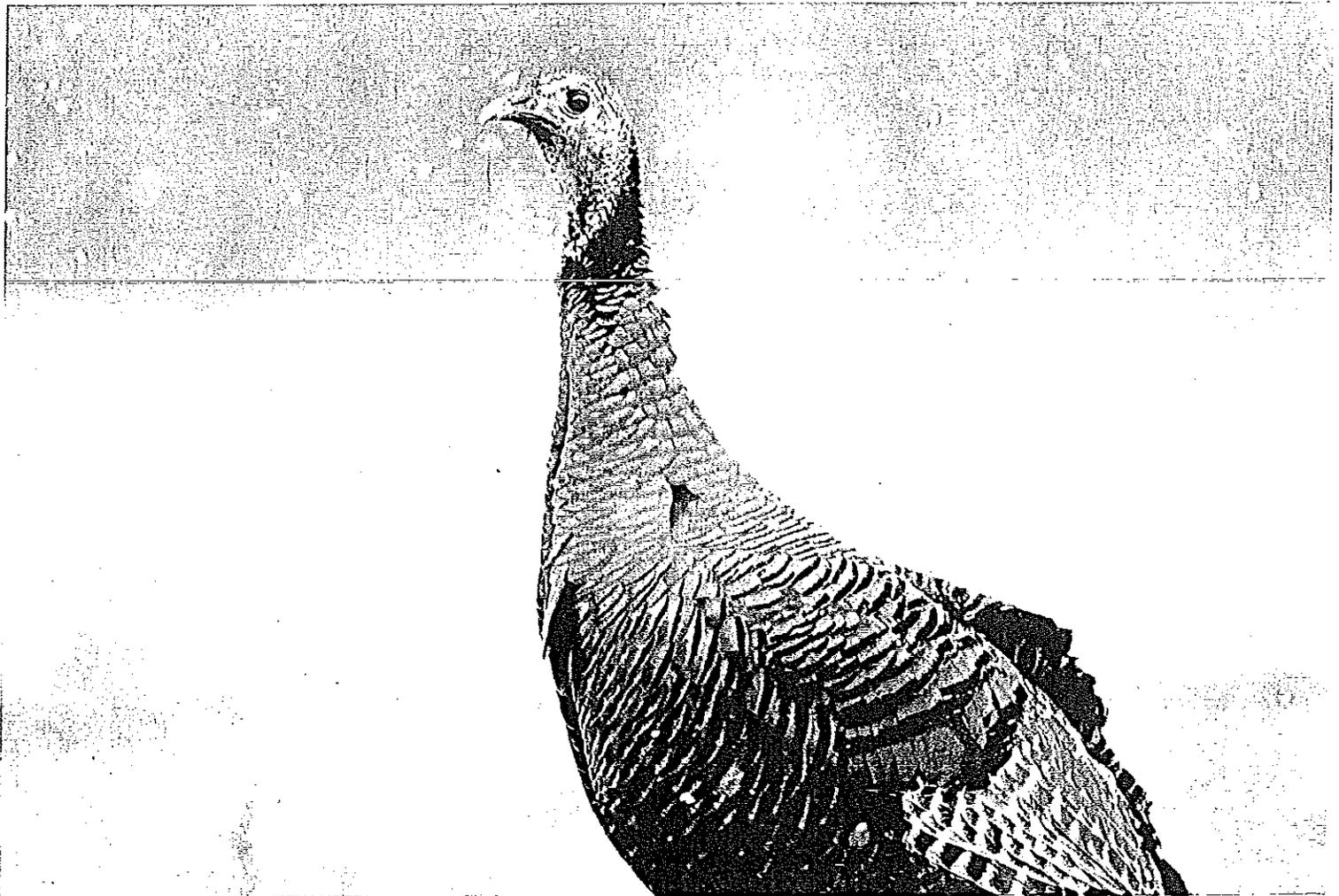
Order on-line with a credit card through the DEEP Store at: www.ct.gov/deep/WildlifeMagazine

Connecticut Wildlife

PERIODICALS
POSTAGE PAID AT
BURLINGTON, CT,
AND ADDITIONAL
OFFICES

Connecticut Department of Energy and Environmental Protection
Bureau of Natural Resources / Wildlife Division
Sessions Woods Wildlife Management Area
P.O. Box 1550
Burlington, CT 06013-1550

|||||
S14 P19 EXPIRES COMP.
MANSFIELD CONSV/INLD WETLANDS
TOWN HALL
4 S EAGLEVILLE RD
STORRS CT 06268-2574



The Wildlife Division monitors changes in Connecticut's wild turkey population through several annual surveys, including a brood survey and hunter survey. See page 9 to learn more.



Connecticut Department of
ENERGY &
ENVIRONMENTAL
PROTECTION

79 Elm Street • Hartford, CT 06106-5127

www.ct.gov/deep

Affirmative Action/Equal Opportunity Employer

University of Connecticut
31 LeDoyt Road U-3055

Storrs, CT 06269-3055

Attn: Richard A. Miller

Re: Permit No.: DIV- 201205385, IW-201205383, WQC- 201205382
USACOE No.: NAE-2004-3990
Town: Mansfield
Project: North Hillside Road Extension / Research and Technology Park

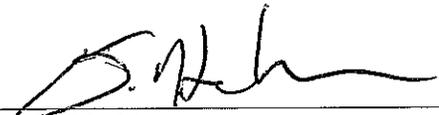
Dear Mr. Miller:

The Commissioner of Environmental Protection has approved your application to conduct certain regulated activities. Your attention is directed to the conditions of the enclosed permit or certificate. You should read the enclosed document carefully, as all construction or work must conform to that which is authorized.

If you have not already done so, you should contact your local inland wetlands agency and the U.S. Army Corps of Engineers to determine local and federal permit requirements on your project, if any. Write to the Corps' New England District, Regulatory Branch, 696 Virginia Road, Concord, MA 01742-2751; or call 1-800-343-4789.

If you have any questions concerning this approval, please contact the Inland Water Resources Division at (860) 424-3019.

12/9/2013
Date



Doug Hoskins
Environmental Analyst III
Inland Water Resources Division

COPIES FURNISHED TO:

U.S. Army Corps of Engineers
DEP Water Protection - PED
DEP Fisheries

Conservation Commission
Inland Wetlands Agency
Planning & Zoning Commission

Eric Mas, Fuss & O'Neill
David J. Monz, Esq., Updike, Kelly & Spellacy
Arthur A. Smith, Esq.
Paul Ferri, UCONN

EMas@fando.com
DMonz@uks.com
attyasmith@aol.com
paul.ferri@uconn.edu

PAGE
BREAK



79 Elm Street • Hartford, CT 06106-5127

www.ct.gov/deep

Affirmative Action/Equal Opportunity Employer

PERMIT

Permittee: University of Connecticut
31 LeDoyt Road U-3055
Storrs, CT 06269-3055

Attn: Richard A. Miller

Permit No: DIV- 201205385, IW-201205383, WQC- 201205382

Permit Type: Water Diversion
Inland Wetlands and Watercourses
Water Quality Certification

Town: Mansfield

Project: North Hillside Road Extension / Research and Technology Park

Pursuant to Connecticut General Statutes section 22a-368, University of Connecticut (the "permittee") is hereby authorized to divert the waters of the state. Pursuant to Connecticut General Statutes Sections 22a-39 the Commissioner of Energy and Environmental Protection hereby grants a permit to the permittee to conduct activities within inland wetlands and watercourses. Pursuant to Section 401 of the Federal Clean Water Act (33USC 1341) Water Quality Certification is hereby issued to the permittee for the discharge(s) of material into waters of the State. All authorizations made herein are in accordance with the applications referenced above and filed with this Department on June 28, 2012 and described herein. The purpose of said activities is to allow for 1) construction of a 3,400-foot, 2-lane, 32-foot wide road through land adjacent to the University of Connecticut's core campus known as the "North Campus" including three wetland crossings and stormwater treatment structures, 2) widening of Rte. 44 at terminus of North Hillside Rd. for turning lanes, and 3) creation of six conceptual development envelopes on six parcels of future research and technology space area located in the "North Campus" section of the University of Connecticut's Storrs campus generally bounded on the north by Middle Turnpike (Rte. 44), on the east by Storrs Rd. (Rte 195), on the south by North Eagleville Road, and on the west by Hunting Lodge Road (the "site").

AUTHORIZED ACTIVITY

Specifically, the permittee is authorized to 1) impact 0.53 acres of inland wetlands, watercourses, and/or waters of the state, and 2) collect and impound storm water runoff from an area of approximately 170 acres for storm water management purposes. These activities will be conducted in accordance with said application and plans which are a part thereof entitled 1) "Connecticut Department of Transportation / Plans for North Hillside Road Extension / Town of Mansfield," drawing nos. G-1, TYP-01, and MDS -01 through MDS-02 (plotted February 9, 2013) ; MDS-03

through MDS-04, HPN-01 through HPN-12, and GRA-01 through GRA-12, LND-01 through LND-12 (plotted February 11, 2013); WMT-01 and WMT-02 (plotted February 8, 2013); prepared by Fuss & O'Neill; 2) "University of Connecticut North Hillside Road Extension" (various titles), Plate 1 and Plate 2 (dated February 9, 2013); Plates 3 through 30 (dated February 8, 2013); prepared by Fuss & O'Neill; and 3) "University of Connecticut North Hillside Road Extension – Proposed Conservation Easement," dated November 2012, prepared by Fuss & O'Neill (the "plans").

Said discharge(s) of material will comply with the applicable provisions of Section 301, 302, 303, 306 and 307 of the Federal Clean Water Act and will not violate Connecticut's Water Quality Standards.

This authorization constitutes the licenses and approvals required by Section 22a-39 of the Connecticut General Statutes and is subject to and does not derogate any present or future property rights or other rights or powers of the State of Connecticut, conveys no property rights in real estate or material nor any exclusive privileges, and is further subject to any and all public and private rights and to any federal, state, or local laws or regulations pertinent to the property or activity affected thereby.

This authorization does not comprise the licenses or approvals as may be required by Chapters 446i, 446j and 446k of the Connecticut General Statutes.

PERMITTEE'S FAILURE TO COMPLY WITH THE TERMS AND CONDITIONS OF THIS PERMIT SHALL SUBJECT PERMITTEE AND PERMITTEE'S CONTRACTOR(S) TO ENFORCEMENT ACTIONS AND PENALTIES AS PROVIDED BY LAW.

This authorization is subject to the following conditions:

SPECIAL CONDITIONS:

1. **Wetland Monitoring.** The permittee shall monitor and report on the condition of the compensatory wetland creation site as well as existing Vernal Pools 1, 2, 3, 4, 10 and 11 pursuant to the permittee's Wetland Mitigation Plan contained in Attachment L of the their application, dated June 2012 and revised to February, 2013.
2. **Conservation Easement Deed Restriction.** Within 90 days of the date this permit is issued and prior to initiation of permitted work in aquatic resources, the permittee shall submit to the Department a draft of the conservation easement deed restriction. Within 30 days of the date the Department approves this draft document in writing, the permittee shall execute and record it with the Registry of Deeds for the Town of Mansfield. A copy of the executed and recorded document must then be sent to the Department within 120 days of the date the Department approves it.
3. **Non-potable Water Use.** The permittee shall use only non-potable water for irrigation on North Campus parcels. Any land lease agreements between the permittee and future North

Campus tenants shall include language requiring the use of only non-potable water for irrigation purposes.

4. **Future Parcel Development.** Any site plans for future parcel development shall be submitted to the Department for its review. Construction for future parcel development shall not commence without written approval from this department. Any land lease agreements between the permittee and future North Campus tenants shall include language requiring that the tenant submit such site plans to the department for review and approval.
5. **Low Impact Development.** All future parcel development undertaken by the permittee or future leases shall a) incorporate Low Impact Development and green infrastructure approaches to stormwater management to the extent practicable, and b) be in accordance with the Connecticut Stormwater Quality Manual (2004, or as amended).
6. **Northern Spring Salamander.** The permittee shall restrict construction activities at Wetland Crossing A to the period of November through March to avoid impacting potential populations of the state-listed Northern Spring Salamander.
7. **Amphibian Migration.** Site clearing or grading activities within 750 feet of a vernal pool shall be performed outside of the spring amphibian migration period of March 15 through June 1. In addition, the permittee shall install and maintain low profile rigid amphibian guidance fencing for approximately 350 feet north and south of Wetland Crossing C at the toe of the slope of the roadway embankment and around the stormwater basins, and for approximately 175 feet north and south of Wetland Crossing A at the toe of the slope of the roadway embankment and around the stormwater basin, to guide amphibians into the bridge openings and further reduce the potential for amphibian access to the roadway and stormwater basins.
8. **Grassland Birds.** Prior to any development activity on existing agricultural fields on the North Campus between late April and July, the permittee shall consult with a qualified wildlife biologist to perform a survey of these areas to verify a lack of nesting state-listed grassland bird species. Should state-listed grassland bird species be detected, construction shall not take place in these habitats until nesting and rearing activity has been completed.
9. **Wetland Boundaries.** The permittee shall clearly delineate in the field all wetland boundaries adjacent to proposed construction areas prior to the start of construction.

GENERAL TERMS AND CONDITIONS:

1. **Initiation and Completion of Work.** At least fourteen (14) days prior to starting any construction activity at the site, the permittee shall notify the Commissioner of Energy and Environmental Protection (the "Commissioner"), in writing, as to the

date activity will start, and no later than five (5) days after completing such activity, notify the Commissioner, in writing, that the activity has been completed.

2. **Expiration of Permits:**

- a. Inland Wetlands and Watercourses & Water Quality Certification. If the activities authorized pursuant to Connecticut General Statutes Sections 22a-39 or Section 401 of the Federal Clean Water Act (33USC 1341) Water Quality Certification are not completed by five years after the date of this license, or by the expiration date of the permit issued by the U.S. Army Corps of Engineers for this proposal, whichever is sooner, said activity shall cease and, if not previously revoked or specifically extended, this permit shall be null and void

Upon the written request of the permittee and without notice, the Commissioner may extend the expiration date of this permit for a period of up to one year, which period may be extended once for a like period, in order for the permittee to complete activities authorized herein which have been substantially initiated but will not be completed by the expiration date of this license. Any request to extend the expiration date of this permit shall state with particularity the reasons therefore.

In making his decision to extend the expiration date of this license, the Commissioner shall consider all relevant facts and circumstances including but not limited to the extent of work completed to date, the permittee's compliance with the terms and conditions of this license, and any change in environmental conditions or other information since the permit was issued. Any application to renew or reissue this permit shall be filed in accordance with the Section 22a-39 of the General Statutes and section 22a-3a-5(c) of the regulations of Connecticut State Agencies.

- b. Water Diversion. Authorization pursuant to Connecticut General Statutes section 22a-368 shall expire on December 1, 2038.

3. **Compliance with Permit.** All work and all activities authorized herein conducted by the permittee at the site shall be consistent with the terms and conditions of this license. Any regulated activities carried out at the site, including but not limited to, construction of any structure, excavation, fill, obstruction, or encroachment, that are not specifically identified and authorized herein, or exempted pursuant to section 22a-377 of the General Statutes or section 22a-377(b)-1 of the Regulations of Connecticut State Agencies, shall constitute a violation of this permit and may result in its modification, suspension, or revocation. In constructing or maintaining the activities authorized herein, the permittee shall not store, deposit or place equipment or material including without limitation, fill, construction materials, or debris in any wetland or watercourse on or off site unless specifically authorized by this license.

Upon initiation of the activities authorized herein, the permittee thereby accepts and agrees to comply with the terms and conditions of this license. The permittee may not make any alterations, except de minimis alterations, to any structure, facility, or activity authorized by this permit unless the permittee applies for and receives a modification of this permit in accordance with the provisions of section 22a-377(c)-2 of the Regulations of Connecticut State Agencies. Except as authorized by subdivision (5) of section 22a-377(b)-1(a) of the Regulations of Connecticut State Agencies, the permittee may not make any de minimis alterations to any structure, facility, or activity authorized by this permit without written permission from the Commissioner. A de minimis alteration means an alteration which does not significantly increase the quantity of water diverted or significantly change the capacity to divert water.

4. **Transfer of Permit.** This authorization is not transferable without the written consent of the Commissioner.
5. **Reliance on Application.** In evaluating the permittee's application, the Commissioner has relied on information provided by the permittee. If such information subsequently proves to be false, deceptive, incomplete or inaccurate, this permit may be modified, suspended or revoked.
6. **Best Management Practices.** In constructing or maintaining the activities authorized herein, the permittee shall employ best management practices, consistent with the terms and conditions of this license, to control storm water discharges and erosion and sedimentation and to prevent pollution. Such practices to be implemented by the permittee at the site include, but are not necessarily limited to:
 - a. Prohibiting dumping of any quantity of oil, chemicals or other deleterious material on the ground;
 - b. Immediately informing the Commissioner's Oil and Chemical Spill Section at 424-3338 of any adverse impact or hazard to the environment, including any discharges, spillage or loss of oil or petroleum or chemical liquids or solids, which occurs or is likely to occur as the direct or indirect result of the activities authorized herein;
 - c. Separating staging areas at the site from the regulated areas by silt fences or haybales at all times.
 - d. Prohibiting storage of any fuel and refueling of equipment within 25 feet from any wetland or watercourse.
 - e. Preventing pollution of wetlands and watercourses in accordance with the document "Connecticut Guidelines for Soil Erosion and Sediment Control" as

revised. Said controls shall be inspected by the permittee for deficiencies at least once per week and immediately after each rainfall and at least daily during prolonged rainfall. The permittee shall correct any such deficiencies within forty eight (48) hours of said deficiencies being found.

- f. Stabilizing disturbed soils in a timely fashion to minimize erosion. If a grading operation at the site will be suspended for a period of thirty (30) or more consecutive days, the permittee shall, within the first seven (7) days of that suspension period, accomplish seeding and mulching or take such other appropriate measures to stabilize the soil involved in such grading operation. Within seven (7) days after establishing final grade in any grading operation at the site the permittee shall seed and mulch the soil involved in such grading operation or take such other appropriate measures to stabilize such soil until seeding and mulching can be accomplished.
- g. Prohibiting the storage of any materials at the site which are buoyant, hazardous, flammable, explosive, soluble, expansive, radioactive, or which could in the event of a flood be injurious to human, animal or plant life, below the elevation of the five-hundred (500) year flood. Any other material or equipment stored at the site below said elevation by the permittee or the permittee's contractor must be firmly anchored, restrained or enclosed to prevent flotation. The quantity of fuel stored below such elevation for equipment used at the site shall not exceed the quantity of fuel that is expected to be used by such equipment in one day.
- h. Immediately informing the Commissioner's Inland Water Resources Division (IWRD) of the occurrence of pollution or other environmental damage resulting from construction or maintenance of the authorized activity or any construction associated therewith in violation of this license. The permittee shall, no later than 48 hours after the permittee learns of a violation of this license, report same in writing to the Commissioner. Such report shall contain the following information:
 - (i) the provision(s) of this permit that has been violated;
 - (ii) the date and time the violation(s) was first observed and by whom;
 - (iii) the cause of the violation(s), if known
 - (iv) if the violation(s) has ceased, the duration of the violation(s) and the exact date(s) and times(s) it was corrected;
 - (v) if the violation(s) has not ceased, the anticipated date when it will be corrected;

- (vi) steps taken and steps planned to prevent a reoccurrence of the violation(s) and the date(s) such steps were implemented or will be implemented;
- (vii) the signatures of the permittee and of the individual(s) responsible for actually preparing such report, each of whom shall certify said report in accordance with section 9 of this license.

For information and technical assistance, contact the Department of Energy and Environmental Protection's Inland Water Resources Division at (860)424-3019.

7. **Contractor Liability.** The permittee shall give a copy of this permit to the contractor(s) who will be carrying out the activities authorized herein prior to the start of construction and shall receive a written receipt for such copy, signed and dated by such contractor(s). The permittee's contractor(s) shall conduct all operations at the site in full compliance with this permit and, to the extent provided by law, may be held liable for any violation of the terms and conditions of this license.
8. **Monitoring and Reports to the Commissioner.** The permittee shall record all actions taken pursuant to Condition Number 6(e) of this permit and shall, on a monthly basis, submit a report of such actions to the Commissioner. This report shall indicate compliance or noncompliance with this permit for all aspects of the project which is the subject of this license. The report shall be signed by the environmental inspector assigned to the site by the permittee and shall be certified in accordance with Condition Number 9 below. Such monthly report shall be submitted to the Commissioner no later than the 15th of the month subsequent to the month being reported. The permittee shall submit such reports until the subject project is completed.
9. **Certification of Documents.** Any document, including but not limited to any notice, which is required to be submitted to the Commissioner under this permit shall be signed by the permittee, a responsible corporate officer of the permittee, a general partner of the permittee, or a duly authorized representative of the permittee and by the individual or individuals responsible for actually preparing such document, each of whom shall certify in writing as follows:

"I have personally examined and am familiar with the information submitted in this document and all attachments and certify that based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief, and I understand that any false statement made in this document or its attachments may be punishable as a

criminal offense in accordance with Section 22a-6 and Section 22a-376 under Section 53a-157b of the Connecticut General Statutes."

10. **Submission of Documents.** The date of submission to the Commissioner of any document required by this permit shall be the date such document is received by the Commissioner. Except as otherwise specified in this license, the word "day" as used in this permit means the calendar day. Any document or action which falls on a Saturday, Sunday, or legal holiday shall be submitted or performed by the next business day thereafter.

Any document or notice required to be submitted to the Commissioner under this permit shall, unless otherwise specified in writing by the Commissioner, be directed to:

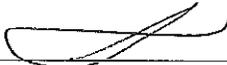
The Director
DEEP/Inland Water Resources Division
79 Elm Street, 3rd Floor
Hartford, Connecticut, 06106-5127

11. The permittee may not make any alterations, except de minimis alterations, to any structure, facility, or activity authorized by this permit unless the permittee applies for and receives a modification of this permit in accordance with the provisions of section 22a-377(c)-2 of the Regulations of Connecticut State Agencies. Except as authorized by subdivision (5) of section 22a-377(b)-1(a) of the Regulations of Connecticut State Agencies, the permittee may not make any de minimis alterations to any structure, facility, or activity authorized by this permit without written permission from the Commissioner. A de minimis alteration means an alteration which does not significantly increase the quantity of water diverted or significantly change the capacity to divert water.
12. Unless the permittee maintains in optimal condition any structures or facilities authorized by this permit, the permittee shall remove such structures and facilities and restore the affected waters to their condition prior to construction of such structures or facilities.
13. This permit is subject to and does not derogate any rights or powers of the State of Connecticut, conveys no property rights or exclusive privileges, and is subject to all public and private rights and to all applicable federal, state, and local law. In constructing or maintaining any structure or facility or conducting any activity authorized herein, the permittee may not cause pollution, impairment, or destruction of the air, water, or other natural resources of this State. The issuance of this permit shall not create any presumption that this permit should be renewed.

DIV- 201205385, IW-201205383, WQC- 201205382
UCONN
Mansfield
Page 9 of 9

Issued by the Commissioner of Energy and Environmental Protection on:

12/9/13
Date


Macky McCleary, Deputy Commissioner